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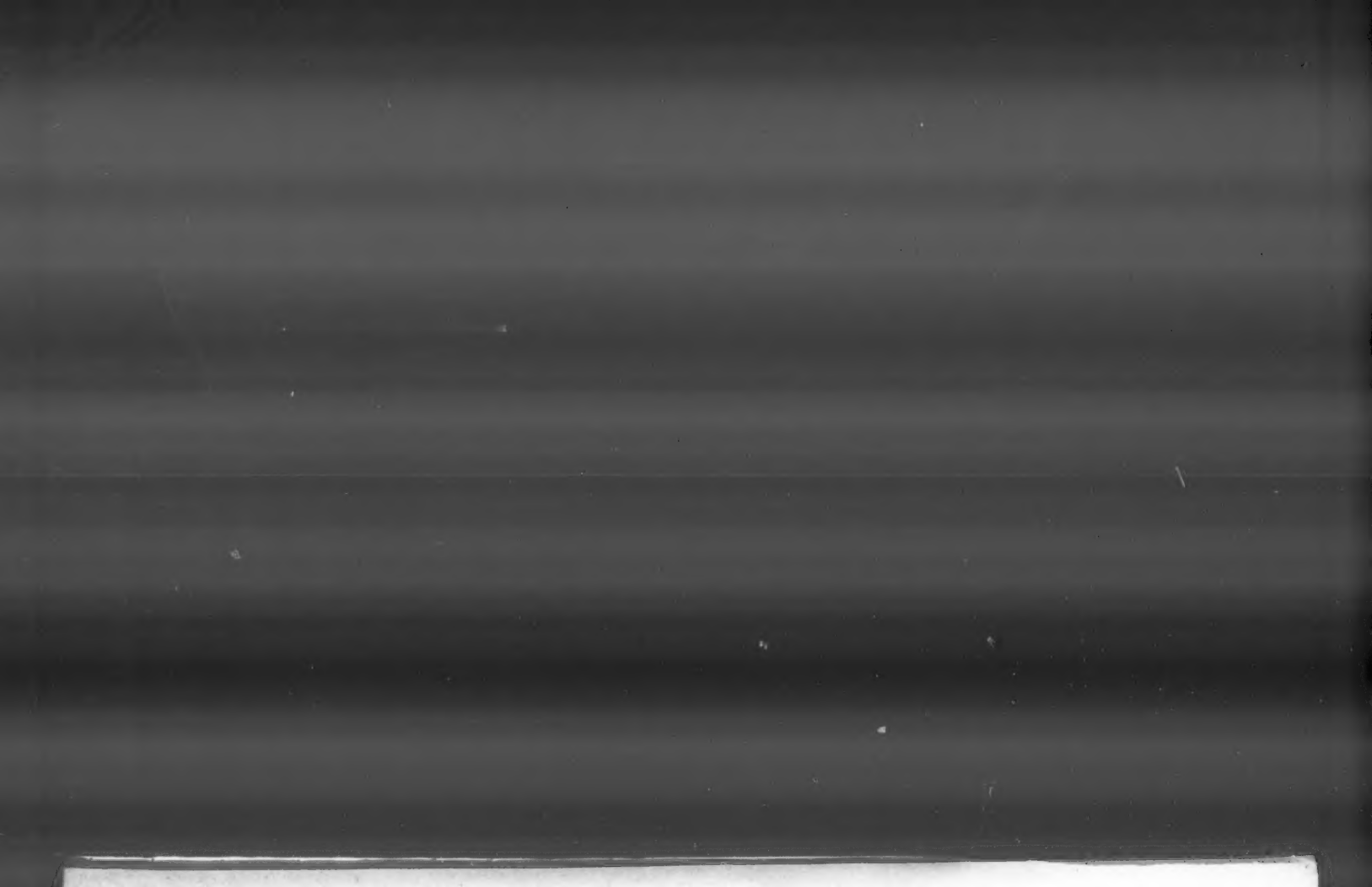

THE

QUARTERLY JOURNAL

OF

ECONOMICS

AUGUST, 1919

FEDERAL OPERATION OF RAILROADS DURING THE WAR

SUMMARY

Reasons why the roads were taken over by the government, 577. — The contract, 582. — Federal operation, 587. — Labor conditions, 602. — Rate increases, 606. — Capital expenditures and the revolving fund, 609. — Relation of the railroad administration to existing regulating agencies, 611. — The future, 617.

On December 26, 1917, the President of the United States issued a proclamation taking possession of the railroads of the country, under the powers granted by the Army Appropriation Act of August 29, 1916. As a preliminary to this profoundly significant step, there were many months of strenuous railroad history. In April the Railroads' War Board had assumed direction of the railroads, under a resolution signed by nearly seven hundred executives, in which the signatories pledged themselves during the war to coördinate their operations in a continental railway system, "merging during such period all their merely individual and competitive activities in the effort to produce a maximum of national transportation efficiency." As the resolution indicated, they desired to be of the greatest service possible in the struggle upon which the country was about

to enter. But they had another object, frankly expressed by more than one executive; they proposed to demonstrate to the country that a coöperative organization of private railroad corporations could so successfully meet the situation that government interference with operation would be unnecessary.

Their failure to effect this demonstration was due to many causes. Probably the most potent of these finds its source in the fundamentally competitive atmosphere in which the railroads have always operated. While in many respects actual competition between individual carriers had reduced itself to matters of service alone, yet our entire body of legislation has been constructed on the competitive theory, and we have forbidden railroads to make agreements that would in any way relieve them from the consequences of this principle. When railroads serving the same termini are not permitted under the Interstate Commerce Act to enter into any agreement for the division of earnings, it was not only natural but justifiable that a carrier should resist attempts on the part of the Railroads' War Board to divert traffic to less congested routes. Only an exaggerated patriotism would induce a corporation without compensation to hand its traffic over to a rival. Other conflicts of a similar sort between the competitive and the coöperative principle blocked the attainment of complete success.

Again the railroads were facing a serious financial problem. They had for some years previously been appealing for higher rates, with indifferent success. They were now faced with an unprecedented traffic, and consequently a need for extensions and betterments as well as for generous maintenance, all to be met at rapidly increasing prices of materials. Looming on the horizon were the demands of labor for increases in wages

to meet the steadily increasing cost of living. Increases in rates might have been granted by the Interstate Commerce Commission similar to those later imposed by the Federal Railroad Administration, but aside from the delays involved in the necessary legal procedure — the opposition of shippers, the protracted hearings, the time required for a considered opinion by the Commission — there were the endless difficulties involved in the relations with state commissions. Moreover, altho some of the increasing expense of operation might have been met by such increases in rates, the additional income would have gone but a little way toward obtaining the additional facilities and the plant extensions required. And there was little likelihood of securing capital directly. For it is very doubtful whether their income accounts would have so improved in appearance as to attract investors, in the face of the patriotic appeals for the contribution of all private savings to the winning of the war. Neither was there assurance that even if capital could be lured into the railroad industry, the needed facilities could be obtained. Steel and other materials were being "rationed" and cars and locomotives were going abroad for more direct and immediate war service.

On the operating side, there were serious difficulties that lent weight to the argument for government management. Traffic in the eastern section of the country was unprecedented, including the food and munitions going abroad, the raw materials and coal for the manufacturing section, building materials to supply government contracts, and all the varied and unusual demands created by the war emergency. This traffic was originating in and passing through the most congested section of the country, and that for export was routed without restraint to the usual outlets, because as yet coöperation with shipping had not proceeded far

enough to make any other policy possible. Priority for government freight, a privilege in many cases grossly abused, with no central authority to determine the degree of priority, seriously increased the congestion. Providence added to the complications by a winter almost unknown in its severity. This not only hampered rail transportation, but blocked the marine terminals and stopped the flow of traffic. Motive power kept long in service because there was little opportunity for adequate repairs, was crippled and inefficient. There was no satisfactory coöperation between rail and water service, and many of the Atlantic coastwise vessels were withdrawn by the War and Navy Departments, and the traffic thrown on the railroads.

The operating troubles were almost wholly in the east, and the government might have assumed control only of those carriers that were specifically required for the task in hand, instead of taking possession of the system as a whole. But aside from the fact that it was impossible to anticipate at that time how extensive would be the ramifications of the war needs, and just what lines of railroad would be required, the government might have initiated serious controversies if it had selected certain roads whose earnings were to be guaranteed and whose labor was to be assured the market wage. By the so-called Railroad Control Act approved March 21, 1918, which put the proclamation of the President into effect, it was provided that the President might turn any road back to its owners before July 1, 1918, by which time presumably the government would be in a position to judge whether it would find it wise to operate the system as a whole. Whether if properly backed by the government in their financial policy, in their dealings with labor, and in hurdling the many restrictive statutes federal and state, the railroads could have operated

satisfactorily under private management, is an academic question that need not detain us here. That there was some friction among the carriers themselves and a lack of coöperation on the part of a few, is common knowledge. Yet this might have been overcome in time but for the more serious difficulties. It would probably have been impossible to obtain a suspension of existing restrictive statutes; it was the belief of the President and of many members of Congress that financial aid could not be obtained for the railroads from the government unless the government were in complete control. As the President said in his statement accompanying the proclamation that took over the railroads, "The financial interests of the government and the financial interests of the railways must be brought under a common direction."

With a poor prospect of a prompt increase in rates, a dubious investment market for railroad securities, and a stringency in the materials and facilities needed, the one policy that gave any promise of saving the day was the use of existing facilities and equipment to their absolute capacity regardless of ownership. As a war measure, the taking over of the railroads was, under the circumstances, inevitable and a wholly wise procedure. To quote the President again, "It was thought to be in the spirit of American institutions to attempt to do everything that was necessary through private management, and if zeal and ability, and patriotic motive could have accomplished the necessary unification of administration, it would certainly have been accomplished; but no zeal or ability could overcome insuperable obstacles, and I have deemed it my duty to recognize that fact in all candor, now that it is demonstrated, and to use without reserve the great authority reposed in me. A great national necessity dictated the action, and I was therefore not at liberty to abstain from it."

It should be stated at the outset, that in appraising the results of the past fifteen months of government operation, no attempt will be made to determine from this experience the desirability of permanent nationalization. The period has been a wholly unprecedented one, from which no valid conclusions may be drawn. It is not surprising that many individuals and many journals opposed to government ownership, and fearful that once the government takes hold, it will never let go, should have watched every move with intense interest, and seized upon every unfavorable development as an argument to support their contentions. It is not so clear why those associated with federal operation should have made predictions concerning the results of unified operation that they could not hope to realize. Beyond their natural desire to make the railroads contribute to their utmost in winning the war, they could have had no other wish than to do the best possible job under the difficult circumstances, and the necessity constantly of explaining away unfulfilled promises has only laid them open to the charge of cherishing an ulterior purpose.

The Contract

The President's proclamation ordered the Director General to draw up agreements for compensation, based upon an annual guaranteed rental above depreciation and maintenance, equivalent to the average of the annual net operating income for the three-year period ending June 30, 1917. It was declared that nothing done under the proclamation should impair the rights of stockholders and bondholders to receive just and adequate compensation for the use of their property. Regular dividends and interest were to be continued until and unless the Director General determined otherwise, and

subject to his approval carriers might renew and extend existing obligations. The Federal Control Act, approved March 21, 1918, ratified the terms of the proclamation — that the compensation should be an annual sum equivalent to the average of the net operating income for the three years ending June 30, 1917, to be ascertained and certified to by the Interstate Commerce Commission. It was enacted that every agreement should contain adequate provision for maintenance of property, for its return in substantially as good condition as at the beginning, with provision for reimbursement to the United States for the cost of additions and betterments not properly chargeable to it. Power was given to the President to make special contracts when abnormal conditions, such as a receivership, prevailed during the " three-year test period." The federal administration was to pay interest on any funds expended by a carrier for improvements and extensions, if made with the approval of the President. No carrier without presidential approval could declare a dividend in excess of its regular rate during the three-year test period. A " revolving fund " of $500,000,000 was created, out of which, in addition to meeting the expenses of federal control and the compensation of carriers, provision might be made for terminals and equipment. The President might order any carrier to make additions and betterments or provide terminals and equipment, and might make advances from the revolving fund with proper provisions for interest and reimbursement. If the contract was not accepted by the carrier, the President was authorized to pay to it 90 per cent of the estimated compensation, provision being made for adjudication of the issue by a board of referees appointed by the Interstate Commerce Commission, with final appeal to the Court of Claims.

Under the guidance of this statute, negotiations were undertaken between the Railroad Administration and the carriers for the construction of a "standard contract." So many were the issues involved that the final form was not agreed upon until October 22, 1918, and so varied were the problems of adjustment and the claims for special consideration on the part of the individual carriers, that many of the companies have not yet signed the agreement. Many carriers have announced their intention to follow the method of adjudication provided by the statute.

It is unnecessary to enter into the technical details of this agreement. It follows the provisions of the Federal Control Act already described, and only such points need to be mentioned as will throw further light upon these statutory requirements. The Railroad Administration agreed to meet operating expenses and normal taxes, and to maintain the property and equipment up to the standard prevailing when the road was taken over; but if during the test period, the maintenance appropriations had not been sufficient to put the property in condition for safe operation, additional maintenance up to a normal standard might be provided at the expense of the company. Improvements to railroad property and new equipment were chargeable to the roads, and were to carry interest as rental payable by the Director General, but strictly war improvements were a charge against the government. The annual compensation, payable whether earned or not, was not subject to any deductions that would prevent the company from supporting its corporate organization, keeping up its sinking funds, paying taxes, rents and interest on loans. These charges being provided for, the government reserved an emergency right to make deductions from the remaining compensation to satisfy indebtedness to it.

Such power was to be used only when no other means was available, and when its exercise would not interrupt unnecessarily the regular payment of dividends, where such dividends had been disbursed during the test period. Finally, the contract specifically stated that none of its provisions should be construed as expressing or prejudicing the future policy of the United States concerning railroad ownership, control or regulation.

Protracted negotiations took place before the railroads finally accepted the clauses relative to the right of the government to restore deferred maintenance, and to use a part of the carrier's compensation to pay its debt to the government. But the most insistent contention of the carriers, which was finally denied, was the right to litigation at the end of federal control on the question whether they had suffered damage by reason of diversion of business. It was held by the Director General upon advice of the Solicitor General, that the roads having been taken over for war purposes, Congress intended that the authorized compensation should cover this element.

The "standard return," based upon the average operating income of the three fiscal years previous to 1918, undoubtedly worked injustice to individual roads. For example, the roads of the Southeast, which had been slowly building up their earning capacity, had not in these three years realized fully the results of their investment policy. Yet on the whole, the bargain was probably as fair a one as could have been drawn up for the railroads in general. Nineteen-fifteen was as lean a year as 1917 was a fat one, and the three years when averaged together roughly approximated a just return. And when all the conditions are taken into account, particularly the financial situation that the railroads faced at the beginning of 1918, the transfer of the railroads to the

government must be regarded as distinctly favorable to the interests of railroad stockholders. There is little doubt that the government by this act saved all but the strongest roads from a condition bordering on insolvency.

The Federal Control Act placed within the class of roads entitled to its benefits all independently owned and operated carriers competing or connecting with the roads that had been placed under federal control by presidential proclamation. These were the so-called "short lines." They were in few instances of any importance to the government for the war emergency, yet their very existence was threatened by a policy of unification which would result in a diversion of their traffic. By Section 14 of the Control Act, the President was empowered to relinquish prior to July 1, 1918, any roads not needed, and thereafter any others by agreement with the carriers. In accordance therewith, on June 29, 1918, there were relinquished from federal control 2161 short-line railroads, including standard railroads, plant facilities, electric lines, and switching and terminal roads. By restoration and further relinquishment under agreement, the net number relinquished stood on January 1, 1919, at 2110.

For the protection of these relinquished roads, the administration has prepared a coöperative contract open to signature at will. Signatories are guaranteed a fair division of joint rates, an equitable allotment of cars, and the right to the use of government purchasing agencies. Moreover, in contrast to the refusal of the government to recognize any claim on the part of the controlled railroads to damages for diversion of their business, the Director General agrees to reimburse these short lines in cash for any revenues on competitive traffic lost during 1918, and guarantees for the future to

deliver such amount of competitive traffic to them as is necessary to insure the quantity carried during the three-year test period. Thus far the contract has been taken advantage of by relatively few of the relinquished roads.

Federal Operation

From the summary already made of the reasons why the roads were taken over, it appears clear that the main object in view by the Federal Railroad Administration [1] was that of making the railroads a part of our line of communications and an effective weapon in the conduct of the war. This meant first, that the transportation system of the country must be operated as a unit and made to serve our war needs, with only secondary regard to other considerations, and second, that in the accomplishment of this task, there should be no waste transportation if it could possibly be avoided. We were seriously short of facilities, and the task could be accomplished only if every mile of track and every unit of equipment were used to their utmost capacity and in the most efficient manner. Yet as we shall see later, the demand for speed and efficiency was not always consistent with the requirements of economical railroading.

Of the many methods inaugurated for securing economies in service, those which brought the largest returns in money, if we may rely upon the estimates of the Administration, have been the elimination of passenger service, the unification of terminals, and the reduction in size and expense of the organizations of the individual railroads.

That there was ample justification for elimination of passenger service as a war measure needs little demon-

[1] For the organization of the United States Railroad Administration, with a summary of its accomplishments for the first seven months, see Brice Clagett, in Quarterly Journal of Economics, vol. xxxiii, p. 188, November, 1918.

stration. Even before the war, there was much comment concerning duplicate passenger service out of the large cities, particularly those of the Middle West, like Chicago, St. Louis, and St. Paul, and now when every available locomotive and car was needed either for the handling of food or munitions, or in transporting troops to the camps and the embarkation points, and when track room at the inadequate terminals was at a premium, the Administration was well within its rights in introducing somewhat ruthlessly a severe cut in service. The saving appears to have been the largest in the west and northwest, where passenger accommodations had been the most liberal, and in the Eastern Region where the traffic was heaviest. The method followed was to eliminate duplicate service, and in many cases to lengthen the schedules of limited trains and impose upon them the duty of handling local traffic. The hours of trains on parallel routes were " staggered " and railroad tickets were honored by alternative routes. Some trains with light earnings were discontinued altogether. In the case of transcontinental traffic, the fastest service was assigned to the most direct route, the others being used for local traffic. The Director General estimated the annual saving in passenger train miles as 67,291,000, or a little over 10 per cent. Some of the Regional Directors have computed the saving at $1.00 per mile.

This reduction in scheduled train service made possible a notable achievement of the Administration in its troop movement, in which from January 1, 1918, to the signing of the armistice, there were transported 6,496,-150 men. From 4500 different points, 1,785,342 drafted men were moved to training camps and fed in transit. Of the total movement, 4,038,918 men in 9109 special trains traveled an average distance of 855 miles, the largest long distance troop movement in history. Into

the crowded embarkation ports were brought 1,904,014 men without interference with other traffic. During one period of 30 days, more than 20 troop trains daily entered the port of New York.

That the policy of reduction of passenger service has resulted in very appreciable inconvenience and discomfort to the traveling public, every one can testify, but it was borne with cheerfulness as a war necessity, and for that reason only. That the Administration fully appreciates this fact is evident in the generous restoration of pre-war service that has already taken place. To what extent the roads can or will eliminate the waste of passenger transportation when they are again in possession of their properties remains to be seen. Many executives have contended that the wasteful duplicate service is the result of an inability to agree upon a more efficient schedule of operation, without incurring the penalties of the Anti-trust Act. Whether or not this is true, there is a vast difference between the ability to do a thing, and the desire to do it. The removal of any possible restrictions of law would not compel railroads to arrange their trains on an alternating schedule, or to assign to some one road the limited service and leave to the others the local service. The desire of each road to offer the best service at the most popular hour of the day is the cause of transportation waste, and the removal of legal restrictions with an opportunity to pool earnings, would not provide compensation for a loss of the advertising value of good train service, nor could it eradicate the natural and commendable spirit of emulation.

In the unification of terminal facilities, the opportunities for radical economies are not so abundant as in the reduction of passenger service. While many of the competitive practices have been done away with, the physi-

cal barriers to a thoro unification cannot be removed. The growth in population and the increase in land values has intensified a situation which was essentially uneconomic and unscientific from the beginning, and which is due to the competitive and individualistic character of our railroad development. On the side of passenger service, the most striking case of unification is found in the opening of the Pennsylvania Terminal in New York to the Baltimore and Ohio and the Lehigh Valley railroads.

For the control of freight traffic, terminal managers were appointed at all the important terminal points. While the actual physical reconstruction of terminals was of course impossible, there was opportunity for saving in switching costs and consequently increased speed in handling. Efforts have been made to route traffic so as to ensure delivery with the minimum of switching, and when switching has been required, to confine the service to as few carriers as possible. It was found for example, that in some cases in the Chicago terminal, as many as nineteen different railroads were serving one plant or district solely as a result of competition. Wherever possible, switching is now confined to one line. In the Southwestern Region, the switching work formerly done by 109 roads is now handled by 54.

The weakest point in our present operating machine is found in the state of the terminal facilities, a condition growing rapidly more serious with the increase in population and the lack of available space. It is a comparatively simple problem to increase trackage on the line, but the benefit of such increase is altogether neutralized if cars cannot be handled expeditiously at terminals. As a matter of fact, it may happen that additional business results in an actual loss to the carrier accepting it, because it slows up its entire service, and often only

serves to create congestion and stagnation. It has been the primary object of the carrier to meet the wishes of the shipper, to provide him with equipment promptly as called for, and to accept his consignments without question. In fact, this is the obligation imposed upon the carrier by law, and while there is likewise imposed the legal obligation to deliver, yet the accent both in legislation and in practice has been placed upon the act of getting goods started on their way, regardless of the capacity of the terminal to take care of the cars or of the consignee to unload. The only relief heretofore has been the resort by terminal roads to the crude and unsatisfactory method of embargoes, which have simply forced the congestion back along the line, and have produced wave-like movements of traffic, difficult to handle and creating conditions unsatisfactory to shippers. Under federal operation the so-called "permit system" was introduced for certain kinds of traffic, especially that essential to the war, under which goods could not be accepted for transportation until assurance was received that the consignee could accept and unload without car delay. This system, in the management of which all government departments coöperated, alone made possible the handling of the immense war traffic without congestion. All War and Navy Department shipments were handled on a permit basis. All export traffic via Atlantic, Gulf, and Pacific ports was and is still handled in this manner, and the system was applied during the war to domestic shipments to Philadelphia, New York, and Baltimore. Wheat and hog shipments to primary markets have been stabilized by this process. Except for export shipments and the handling of grain, there is at present no further need for the holding back of traffic, but the success of the experiment has been so decided that it should be carried over into normal times to be

applied in periods of emergency. What embargoes have not been able to accomplish, might be secured through a bureau of the commission such as the Car Service Bureau, charged with the duty of watching congested terminals, and exercising a control over traffic that would assure a more steady flow, and when necessary, divert traffic through gateways that were better prepared to handle it. In connection with the solution of this problem, the Railroad Administration also undertook the coördination of the marine departments of the different railroads and the use of all piers regardless of ownership. A much more ambitious project was the creation of the Exports Control Committee, with power to determine the ports to which traffic should be hauled, thus overcoming the utter lack of coördination between rail and water agencies that prevailed at the beginning. The permit system was employed to prevent the shipment of goods to any port until there was a practical certainty that ships would be promptly available.

The war did not last long enough to give this committee the opportunity to make its influence felt in any large way on the traffic of the country. But some means must soon be found to put this policy into practical operation if we are to utilize to the best advantage our railroad, port, and steamship facilities, and avoid the frequent congestions and blockades that arise from a too great popularity of a relatively few of our ocean terminals. Shipping must be attracted to the less frequented ports, and traffic must be so distributed that a steady flow to and from the ports can be assured the railroads serving them. This will raise the question whether it is to the public interest to permit the continuance of the railroad control of terminal facilities, under which close traffic agreements are made with steamship lines, frequently to the detriment of the proper development of the port.

We shall have no thorogoing solution of the ocean terminal problem until the public recognizes its right and its duty to own and control the facilities in the interest of the public as a whole.

In the reduction of costs of operation and the improvement of service, the greatest opportunities for the future center in the problem of terminals. The public has permitted these properties to develop without, until recently, taking any serious interest in their character and location, and large cities have been provided with separate and scattered terminal yards constructed on the theory that each railroad is an isolated undertaking having no relation to any other. The result is that consolidation of terminal properties becomes today a well-nigh insoluble problem because of its physical difficulties and its financial magnitude. The claim that any movement toward joint terminals would be illegal under the Antitrust Act has no basis in court decision, beyond the ruling that such terminals must not be organized with the purpose of preventing competition.[1] Whether the very moderate movement in the direction of unification inaugurated by the Railroad Administration will be carried over and further developed, depends to a considerable degree upon the plan finally adopted for the future operation of the railroads. The public should certainly not allow this promising beginning to lapse.

By the reduction of the operating organizations, and the elimination of two or three hundred officers at salaries of $5000 or over, Director General McAdoo estimated that he had accomplished an annual saving of about $4,600,000. But this "saving," widely heralded in the newspapers because it meant the elimination of the exorbitant salaries paid to railroad executives, was largely a matter of bookkeeping. The greater part

[1] United States v. Terminal R. R. Association of St. Louis. 224 U. S. 383.

of the officers released by the Administration continued as officers of the railroad corporations, and the sum total of administrative expense remained as before. Moreover, the Director General recognized the necessity of paying salaries of $40,000 and $50,000 to his Regional Directors. Other members of his staff whom he secured at lower salaries, assumed their duties as a war service and at a considerable personal sacrifice. When in addition to this, it is observed that the expenses of the federal administration are steadily growing, it must be concluded that this is one of the instances in which the desire of the Administration to do the popular thing, led it into promises that it was unable to fulfill.

In contrast with the British plan, leaving the operation of the roads to their General Managers under a government guarantee, the Director General inaugurated a régime of federal operation, with a staff which, altho made up largely of experienced railroad men, was required to sever all its former connections and recognize responsibility to him alone. Basing his action upon the Biblical generalization that " no man can serve two masters," he made a definite cleavage between the operating staff and employees, which now were placed on the pay-roll of the Federal Railroad Administration, and the officers of the railroad corporations, who represented the owners, stockholders, and creditors as lessors of the railroad property. Many of the former executives have been retained as operating heads of systems or groups of roads, many others have become presidents of their corporations, with the duty of protecting the interests of their stockholders. The explanation of the practice of the Director General, in notable instances, in passing over the presidents of the large railroads, and selecting subordinate officers as his federal managers, seems to have been a feeling that more whole-hearted

subservience to federal authority would be assured in the case of younger men, whose duties had not brought them so closely in touch with broader corporate interests and questions.

The three "economies" in which the largest estimated saving was shown have now been discussed. Other administration policies may be summarized briefly. Rerouting of traffic to avoid unnecessary mileage was attempted in all sections, and it was assisted materially by shippers themselves who, after the disappearance of the traffic forces and the ending of solicitation, naturally sought the shortest routes for their goods. But direct routes, especially in the east, became so congested that roundabout hauls were required, and the saving was thereby largely nullified. No satisfactory estimate of savings can be made, but it is doubtful whether any large economies resulted under the emergency conditions of the war period. The "sailing-day-plan," under which less-than-carload freight is assembled in solid cars and despatched without transfer to destination, has been widely introduced, but not without protests from shippers in some sections, who have felt that their privileges were being curtailed. They have protested against being obliged to bring their traffic to the freight station on designated days only, and to ship it only by designated routes. But many of the objections to the plan as originally promulgated have now been removed, and with its more general introduction its advantages from the standpoint of service are likely to be better understood and appreciated. The movement for better loading of cars and trains, begun and largely accomplished under the Railroads' War Board, has to some degree improved during the period, with the invaluable assistance of the various government agencies concerned. Moreover, the shippers contributed to this

not alone from patriotic motives, but because they felt the necessity of making full use of their limited supply of cars. Solid trains were routed direct from origin to destination, expediting traffic and saving yard expense. The service was applied most extensively to traffic in flour and grain, lumber, fruit, packing-house products, live-stock, cotton, and oil. However, the statistics of loading, particularly for the Eastern Region, are materially affected by the extent of empty car mileage westbound, which the war exigencies forced upon the management. So far as was possible, the "permit system" was used as a weapon to enforce full return loads. The coal-zoning plan, introduced primarily to meet the fuel shortage, was effective in eliminating a large waste in transportation, altho it necessitated a serious readjustment in markets that were accustomed to certain grades of coal, and were by this plan now obliged to resort to substitutes. An increase in demurrage rates almost to a prohibitive point, was put into force to speed up the unloading of cars. Through interline way billing was extended and reconsignment privileges to a considerable degree eliminated. A system of store door delivery of package freight was introduced in New York and Philadelphia to relieve the terminal situation. The Car Service Section undertook with some success the campaign for advance movement of important raw materials during the summer months, to avoid a possible congestion in the fall. Finally, there may be mentioned the devising of methods for the consolidation and simplification of tariffs and the completion of a uniform freight classification, in preparation long before the war, which has been submitted to the Interstate Commerce Commission, but not yet approved.

In the passenger field, the project which is looked upon with the greatest satisfaction by the Administra-

tion is that of the consolidated ticket office. The number of these was 101 at the beginning of the year, replacing 564 offices previously in existence. It is insisted that the convenience to travellers in the combination of Pullman and ticket offices, and in the opportunity to decide between alternative routes with a minimum of inconvenience, provides a service that the public will demand as a permanent feature. But whether it will persist or not depends altogether upon the extent to which the principle of coöperation among railroads is continued. That consolidated ticket offices can be maintained as at present under a régime of competitive service, such as existed previous to the war, seems very improbable. Whether or not the practice is legal under the Antitrust Act is a matter of dispute among railroad men. In the Union Pacific — Southern Pacific merger case, the prosecuting officers attached much importance to the consolidation of ticket offices as infractions of the law, and after dissolution all consolidated offices were abandoned. Other unification policies in passenger service include the introduction of a universal mileage book, standard ticket forms and baggage rules, and the general practice of abridgment of time-tables and curtailment of advertising. Attempts to standardize dining-car service struck at the very source of individualism, the human stomach, and the results have not been altogether successful. To promote uniformity in operation, there was created in May an Operating Statistics Section with W. J. Cunningham in charge, which was to do for operation what the Interstate Commerce Commission has done for accounting. It was to decide upon operating statistical standards and make them effective, and to analyze and disseminate operating results. Its plan for the standardization of statistical practice was made effective on August 1, 1918, and

its work has developed with such efficiency that its standards and reports are likely to have a permanent place in railroad administration.

In the field of maintenance, many practices have been standardized, and the principles of unification introduced. Locomotive repair shops have been pooled regardless of ownership, thus reducing distance to which locomotives are sent for repairs and the time they are out of service; standard practice has been introduced in many phases of maintenance and inspection, and the policy of inspection has been extended to take the place of commercial insurance, now abolished. Joint purchase of supplies has been undertaken wherever possible. The most sweeping innovation and the one which has met with the strongest opposition, is the introduction of standardization into the manufacture of locomotives and cars. The Director General, in his seven months' report of September, 1918, stated that there were said to be prior to the war 2023 different styles of freight cars, and almost as many of locomotives. At the time of his report, twelve standard types of freight cars had been decided upon, and six types of locomotives in two weights. With interchangeable parts, it was expected that these relatively few types could be more rapidly repaired, particularly when off their own lines, and that the stock of repair parts could be reduced. Moreover, it had already been demonstrated that the speed in production of new equipment was materially increased. Aside from the natural opposition of the locomotive and car builders to this policy, there are many expert railroad maintenance engineers who feel that the policy of standardization has been carried too far, and that many roads are consequently unable to secure the equipment adapted to their peculiar needs. Efficiency in operation has been

sacrificed to efficiency in production. Probably the reasonable policy lies somewhere between the two extremes. While experimentation should be sufficiently encouraged to assure a steady development in efficiency of equipment types, and the railroads should be free to order those types that are best suited to their needs, the public should not be asked to bear the burden of all the variations from standard that the ingenuity of builders can devise, and induce the railroads to purchase. So far as maintenance work is concerned, the record of the administration is not satisfactory, but it has had to contend with inefficient and inadequate labor and a shortage of materials. The amount of deferred maintenance that has piled up on the railroads during the past eighteen months is a matter of grave concern to the owners of the properties.

Two other steps involving far-reaching consequences in the direction of unification have been taken, those relating to the express companies and to the waterways. With the express companies, each railroad had a separate contract, and these contracts varied widely in their stipulations concerning the handling of different kinds of traffic. There was necessity for a uniform contract applicable over the entire railroad net. Accordingly, a corporation known as the American Railway Express Company was created to take over the existing companies during the period of federal control. With this new corporation the Railroad Administration made a contract, under which the express company was to pay to it 50¼ per cent of its gross revenue from transportation of express matter, which was the average payment under the contracts of the previous three years. The balance after deducting operating expenses was subject to a division between the company and the administration. In November, the control and opera-

tion of the company was taken over by the Railroad Administration under presidential proclamation. Express matter is now sent by the most direct route available, and express cars are utilized independently of ownership.

By the Federal Control Act, the President was authorized to expend from the revolving fund what he deemed necessary or desirable for the utilization and operation of canals, and the purchase, or construction and operation of equipment on inland and coastwise waterways. A Marine Department was created under the Railroad Administration. Because of the requisitioning by the government of a large amount of coastwise tonnage for war purposes, the remaining private lines were disposed to accept only the most profitable tonnage, and an additional burden was in consequence thrown on the railroads. Accordingly, the Railroad Administration not only took over all railroad owned steamships, but also under the President's war powers, fifty-one ships belonging to four private companies. These private vessels were returned to their owners after the armistice. In April, 1918, the New York Barge Canal Section was created, and the leasing and construction of equipment was undertaken. But the terminals were not yet constructed and equipment was inadequate throughout the season, so that nothing was accomplished. In July, the Cape Cod Canal was taken over to provide an inside waterway free from submarine danger. Dredging and other maintenance work was at once undertaken, and traffic began moving in volume in the fall. In the same month, the Mississippi and Warrior Waterways Section was created. The fleet of the Kansas City-Missouri River Navigation Company was purchased, and barges were leased from the Corps of United States Engineers. Construction of towboats

and barges was authorized. Traffic on the Mississippi has thus far been confined to that which originates along its banks, but joint rail and water tariffs are to be issued that will show a differential of 20 per cent in favor of the water route between St. Louis and New Orleans. For the coal business between the Warrior River, Alabama, and New Orleans, equipment has been purchased and additional construction authorized. The Delaware and Raritan Canal is being operated by the administration, which is also guaranteeing the Chesapeake and Ohio Canal against loss. Thus far coöperation between rail and water transportation under federal management has been a hope rather than an accomplishment, and this is not the place to discuss the general problem of coöperation. Suffice it to say that so far as such a policy of the Railroad Administration contemplates the utilization of natural waterways, in which the burden of construction and maintenance cost is relatively small, it is to be hoped that the program will be pushed with vigor, and that a real foundation will be laid for a policy of efficient coöperation under private operation. Incentive has heretofore been wholly lacking. It will be lacking again if railroads return to their earlier competitive status. But if coöperation is to prevail at all in the future, the more efficient waterways should be a part of the program.

It will be seen from this summary that the policies of the Railroad Administration may broadly be divided into those that aimed to contribute directly to the war demand, by freeing equipment and right of way for the movement of troops and essential commodities, and those which aimed to meet the steadily rising costs of operation by economies of various sorts. Many of these latter attempts failed, during the war period, to produce the expected results, but the purpose has been clear —

to operate with the greatest possible economy consistent with war's demands. Of course this policy has not been carried out without dissatisfaction to passengers and shippers, and now that the seal of silence imposed by patriotism is broken, we are learning very definitely the public's opinion of government operation. Many of the changes introduced have long been needed, but were impossible of accomplishment under competitive conditions. Should coöperation on a large scale follow this period of federal operation, the lessons learned in the experiment with policies of unification should not be lost.

Labor Conditions

No more serious situation confronted the railroads in December 1917 than that arising from their relations with their employees. A drain of the working forces had begun at the opening of the war, with the allurements of higher wages in other industries, and many of the carriers had been turning their mechanical forces over two or three times in the year. The draft and the call for railroad men to serve in the war zone had further depleted them. The steadily rising costs of living, with too great deliberation on the part of many roads in facing the situation, created a spirit of unrest, broke down the old forms of negotiation, and necessitated adjustments overnight to avoid a stalling of the transportation machine.

One of the first general orders of the Director General created a Railroad Wage Commission, under instructions to make a broad general investigation that should include the relation of railroad wages to those in other industries and the relation of different classes of labor to each other, the wage conditions in different parts of the country, the immediate emergency of the war and the high cost of living. The recommendations of this Com-

mission for immediate relief were based upon an investigation of the increase in living costs since December, 1915, and recommended increases for all employees receiving less than $250 per month, graded from an increase of 43 per cent for all receiving $50 per month and not less than $46 (under $46 a flat increase of $20), down to an increase of $1.00 for those receiving above $248 and not more than $249 per month. These increases were applied to the rates in effect December 31, 1915, and were to be diminished by the amount of any increase received since that time. Reductions in hours were not to be regarded as increases in pay. Existing hours of service and existing rules and conditions of payment were not to be disturbed during the war period. It was pointed out that 80 per cent of the employees were receiving $100 per month or less, and that the number receiving from $150 to $250 per month included less than 3 per cent (excluding officers).

In General Order No. 27 which embodied these recommendations, some additional increases by way of the establishment of minima were granted to the shop crafts and to common labor, but the most significant departure from the conclusions of the Commission was the recognition of the principle of the " basic " eight-hour day in all railroad employment. Overtime was to be paid pro rata unless existing agreements provided otherwise. Where women were employed, suitable working conditions were to be provided and their pay was to be the same as that of men for the same class of work. An advisory Board of Railroad Wages and Working Conditions was set up to hear and investigate matters relating to inequalities in pay and regulations, which was to report to the Director General.

This general increase proved unsatisfactory to many classes, particularly those that had already received in-

creases since December, 1915, and furnished only the beginning of a succession of increases for various classes, including shop employees, clerks, telegraphers, employees in express and Pullman service and finally the four brotherhoods, who received an annual increase of over $60,000,000 in April, 1919. The Board of Wages and Working Conditions has made the announcement — comforting to the railroad managements — that these increases, while generally less than those granted for similar work outside, have been established with the object in mind of creating a wage structure that would survive the war period. The cycle, now officially declared to be complete, is estimated to mean an addition to operating expenses during 1919 of $900,000,000, which is nearly 20 per cent of the total operating revenues for 1918.

But the size of the wage bill is not the most significant change in the situation. Rather does it lie in the development of the policy of standardization. In addition to the Board of Railroad Wages and Working Conditions set up to investigate the larger questions of policy and compensation, there were created bipartisan boards of adjustment with equal representation of employers and employees, to which, under a signed agreement with the unions, controversies were to be referred growing out of the interpretation of wage schedules, that could not be adjusted between the employees and officials of the individual railroads. For the adjustment of controversies among the unorganized employees, an official was appointed under the Division of Labor of the Railroad Administration. As a consequence of this centralization of wage adjustment, there has been developing a uniformity in practice not before prevailing on the railroads of the country. The announcement of the Director General in February, 1918 that no discrimina-

tion would be made in employment because of membership or non-membership in labor organizations, resulted, so he stated, in a declaration from the organized employees that they did not contend for the closed shop as against non-union members, and in the organization of employees into unions on roads that had previously forbidden organization.

As already stated, the Director General formally established the basic eight-hour day.[1] Supplementary orders have done much to make this a real eight-hour day by increasing the number of men to whom time and a half for overtime applies after eight hours, and in the case of other classes, extending the practice of paying time and a half for overtime to all hours after the ninth and tenth. Similarly standard working rules have been established for more than a million employees that had not theretofore worked under fixed regulations. If the roads continue for any considerable time under federal control, it is a safe prophecy that standardized rates, time and regulations will be established permanently throughout the country. That the present organization is working to the general advantage of labor, in spite of the many grumblings, is evident from the action of the four brotherhoods, the barometer of railroad employee sentiment, in proposing a plan for permanent nationalization. This sudden overturn in their established policy is not an altruistic move, but is rather a shrewd estimate as to what federal management means to them.

On the question of the loyalty and efficiency with which labor has worked during the period of federal operation, an answer is well-nigh impossible, because of the amount of dilution incident to the war. That the

[1] Shop crafts waived their rights to limited hours during the war. Many shops worked seventy hours per week and the remainder sixty hours, as a result of the bad condition of locomotives and the shortage of labor. Labor received time and a half for overtime. After the armistice, the eight-hour day was restored.

patriotic stimulus kept the forces, such as they were, up to their maximum effort for the better part of last year is probable. Under the uncertain conditions of the present, when officials and employees are in doubt whether their future employer is to be the United States government or their former executive returned from his period of banishment, there is likely to be a stage of lowered morale and lessened efficiency.

Rate Increases

Finding itself facing the possibility of a huge deficit, primarily as a consequence of wage increases and the increase in cost of materials and supplies, the Administration took advantage of the powers granted in the Federal Control Act, and announced on May 25, 1918, a 25 per cent advance in freight rates effective June 25, and an advance in passenger fares to a minimum of three cents per mile, effective June 10, with a half cent additional per mile for the privilege of purchasing Pullman service.[1] Additional regulations concerning Pullman travel still further increased the cost for those seeking the more luxurious accommodations. The new rates were made specifically to apply to both state and interstate traffic. In many cases, due to changes in minima and in the methods of application, the increases in freight rates were much in excess of 25 per cent.

The method by which the increase was accomplished must have won the envy of all railroad officials, who had struggled through protracted hearings with Federal and State Commissioners, and had been obliged in the end to accept increases, if any at all, far below what they deemed necessary to meet their needs. The Director General explained that action was necessarily delayed

[1] This extra charge has been cancelled since the armistice.

until the Federal Control Act could be passed; that the correction and adjustment of individual items in a structure so vast would have been impossible in any brief space of time, and that after conference with the Commission, and after investigation of existing conditions and a careful estimate of probable results, it was decided to take quick action that would spread the increase as equitably as possible over the entire country. While the Administration doubtless gave the matter mature consideration, the public was not taken into its confidence and had to content itself with newspaper rumors. There is little question that the summary manner in which the increases were put through was deliberate, and designed to forestall any interference that might spring from public discussion. In fact, such a procedure was specifically provided for in the Federal Control Act itself, which reduced the power of the Commission from that of suspension of rates to that of hearing complaints concerning rates actually in effect.

These increases were intended so to enhance net operating revenue that the " standard return " payable to the carriers under their contracts could be secured without drawing upon other government funds. But obviously such a purpose could be based on estimates only, as it was impossible to foretell what the effect upon traffic would be from the increases in rates. So far as passenger traffic was concerned, the deliberate intention of the high charges was to reduce travel, and to free roads and equipment for more important functions — a purpose that largely failed of effect.

As for freight traffic, there was some prospect that the higher rates would be more or less directly reflected in higher net earnings, for transportation demand, in view of war emergency conditions, was largely inelastic, essential commodities having to move regardless of cost.

But the results of the year in no sense fulfilled these optimistic predictions. For the twelve months, the net railroad revenue fell short of the amount required to meet the "standard return" by over $202,000,000. The only district that earned its standard return was the Southern District, comprising the states east of the Mississippi and south of the Ohio and Potomac. The result in the South is attributed to the recent improvement in the physical condition of the southern roads and the large number of camps in that section, but principally to the fact that the years upon which the contract was based were years of light earnings. Their bargain with the government was consequently an unfortunate one.

The reasons assigned by the Director General for the outcome, in which the operating ratio had risen to 81.3 per cent, are all connected directly or indirectly with war conditions — the necessity of moving war freight expeditiously regardless of expense, the loss of men to the draft and to railroad service abroad and the substitution of inexperienced labor, and the rapid increase in cost of labor and materials. Moreover, while wage increases were largely effective from January 1, the railroads received the benefit of rate increases for only the last six months of the year. This deficit, says the Director General, should be frankly charged as war cost and should be considered an exceedingly small expenditure for the result accomplished.

As late as January, 1919, Director General McAdoo expressed the conviction that with the return to more nearly normal conditions the deficit would not only be wiped out, but reductions in rates might gradually be made; and that earnings would show an improvement for each month over the previous year. Yet the reports for the first three months of 1919 do not bear out this

prophecy. The net deficit below the standard return for the first quarter of 1919 amounted to $176,000,000, which is nearly $30,000,000 greater than for the corresponding period of 1918. While operating expenses were considerably greater than a year ago, the operating ratio being 91¾ per cent, the significant factor, particularly in March, was the decline in traffic, which was reflected in a figure of gross revenue only slightly larger than for 1918 in spite of the increase in rates. Whether any further relief is to be found in the development of operating economies remains to be seen. But it seems probable that a genuine revival of peace time industry will be necessary to turn the scale. The Administration is face to face with that fundamental law, so dominant in the railroad industry, that a loss in business cannot be offset by a corresponding reduction in costs. If on the other hand, a substantial increase in business takes place during the year, it should be reflected in a considerable increase of net revenue.

Capital Expenditures and the Revolving Fund

By the Railroad Control Act, a sum of $500,000,000 was appropriated, which together with any funds available from the carriers in excess of the standard return, was to be used as a revolving fund to pay the expenses of federal control, to cover deficits in the standard return, if any, and to provide terminals, motive power and cars. From this fund the President was authorized to make advances to carriers for any part of such additions, betterments and extensions as he had ordered, such advances to be charged against the carrier, and to bear interest. He might also use this fund to promote the operation of canals and inland waterways by the

purchase of equipment or otherwise. From this fund the President was also authorized to purchase for the United States at not exceeding par any securities issued by the carriers, that had been first approved as consistent with the public interest.

During the year 1918 there was authorized for improvement by the Director General through the Division of Capital Expenditures, the amount of $1,279,000,000, of which $573,000,000 was for additions and betterments, $659,000,000 for equipment and $47,000,000 for extensions, branches and other lines. Aside from those appropriations made directly for war purposes, approval was confined to such expenditures as were necessary for safety in operation, or to provide a needed increased capacity, and any expenditure not required for these purposes was in most cases deferred.

The policy was laid down by the Administration of authorizing improvements to effect permanent economies, only when the economy was so great that the cost could probably be saved during the period of federal control. Hence the large items of expenditures were additional main tracks, yard tracks, and sidings, shop buildings, engine houses and appurtenances, and locomotives and cars. Director General Hines, Mr. McAdoo's successor, in submitting to the Secretary of the Treasury in January, 1919, a supplementary estimate for an addition to the revolving fund of $750,000,000, showed that the Railroad Administration had expended for additions and betterments actually made during the year 1918, in excess of the amounts which the companies could repay from their rentals, the sum of $291,000,000. In addition to this, $51,475,000 had been loaned to the New York, New Haven & Hartford, $4,360,000 had been expended for inland waterways, and the Administration was facing an operating deficit estimated at that time at

$196,000,000, since found to be $202,000,000. There were on hand cash and net current assets tied up as working cash capital, $339,000,000. The Director General stated that during 1919, financial provision must be found to finance inland waterway expenditures of $12,840,000; to aid in financing the reorganization of the Boston and Maine, $20,000,000; to finance equipment to be delivered during the year, $286,000,000; and to finance other necessary capital expenditures, $491,000,000. He estimated that $150,000,000 could be derived from company rentals to be devoted to capital expenditures. It should be recalled that all this projected expenditure will be reimbursed to the government with interest with the exception of the operating deficit, which is a direct war cost. The failure of Congress to pass the requested appropriation created a critical situation, which was met by temporary financial expedients, in which the banking community came to the rescue.[1]

Relation of the Railroad Administration to Existing Regulating Agencies

In his proclamation taking possession of the roads, the President directed that the systems of transportation taken over should remain subject for the time being to all statutes and orders of the Interstate Commerce Commission and the state commissions, but that any orders thereafter made by the Director General should have paramount authority.

Such sweeping authority as was assumed by the President under his war powers and as was further specifically delegated to him by the Federal Control Act in March, 1918, could not but run foul of existing regu-

[1] With the reassembling of Congress in May, Director General Hines increased the amount of his request from $750,000,000 to $1,200,000,000.

lating bodies. The very first order of the Director General, dated December 29, 1917, authorized the carriers to disregard established routes whenever necessary in the interest of economy and efficiency, and thereby superseded Section 15 of the Interstate Commerce Act, which protects carriers against being short-hauled, and which grants to shippers the right to route their freight. By throwing all railroads into one operating system and authorizing the utilization of all terminals, equipment, and facilities regardless of ownership, this same General Order removed the protection granted by Section 3, which gives to carriers exclusive right to use their own tracks and terminals. But in the matter of rates, the limitations upon the Commission's authority were particularly severe. The Federal Control Act (Section 10) provides that whenever the public interest requires, the President may initiate rates, fares, charges, classifications, regulations and practices by filing them with the Commission, and that these rates and regulations cannot be suspended by the Commission pending their final determination. They are to take effect upon such notice as the President shall direct. When they are once in effect, the Commission may upon complaint, enter upon hearings and render decisions as to their reasonableness and justice. But the Commission is instructed by law to give due consideration to the fact that the transportation systems are not in competition, but are being operated as a unit. Moreover, whenever the President finds and certifies that in order to defray the expenses of federal operation and cover the compensation to the carriers, it is necessary to increase revenues, the Commission is required in passing upon such increased rates, to take into account the finding and certificate of the President, together with such recommendations as he may make.

This rate-making power of the President supersedes Section 6 of the act, which requires thirty days' notice of a change in rates; it takes away the power under Section 15 to suspend rates, and makes it unnecessary for the carriers to secure advance authority from the Commission to increase rates. While the Commission, within the restrictions stated, is unhampered in rendering decisions upon specific complaints after hearing, and has decided cases continuously during the past year with the Director General as defendant, many of which went against the Railroad Administration, yet its power has unquestionably been reduced in actions involving an entire schedule of rates, when the fundamental question at issue is one of adequate revenue. The findings and certificate of the Director General have, by the specific requirements of law, a weight that leaves the Commission little choice except to approve the schedule in effect. Such issues as have given opportunity to the Commission to assert its remnant of independence may be illustrated by the case of Willamette Valley Lumbermen's Association *v.* Southern Pacific Company (51 I. C. C. 250) in which the rates were complained of as unreasonable and unduly preferential of other shippers and localities. It was the argument of the Director General that the words "reasonable and just" in the Control Act have a meaning different from that applied to them in the Act to Regulate Commerce, and that the rates initiated by the Director General are in themselves and in relation to each other presumed to be right, and cannot be changed without an affirmative showing that they are wrong. The first contention the commission denied. To the second, they replied that there was no authority in the Control Act for perpetuating during federal control a rate adjustment that was unlawful under the Act to

Regulate Commerce; that the increases initiated by the Director General were merely superimposed on the existing basis of rate adjustment, which all the evidence shows was unreasonable and unjust. "It is inconceivable," said the Commission, "that the Congress did a vain thing in conferring upon the Commission power to determine whether or not the rates initiated by the Director General are just and reasonable." An appropriate order was entered against the defendants, including the Director General.

So far as rates not under federal control are concerned, they are subject in all their interstate relations to the Act to Regulate Commerce, and the commission still has its former jurisdiction over joint traffic between federal and non-federal roads. But this jurisdiction covers a relatively insignificant portion of the traffic of the country.

In the field of authority occupied by the state commission, the Federal Railroad Administration has shown even less regard for the sensibilities of regulating authority. General Order No. 28, increasing freight and passenger rates, was made specifically applicable to intrastate as well as interstate traffic. In matters of service, the Railroad Administration proceeded with almost no recognition of even the existence of state commissions. Relations became strained as a result of the creation by the Federal Administration of regional and district traffic committees. These committees, composed of representatives of the Administration and of the business interests, were set up after the schedule of increased rates had gone into effect, and were designed to promote efficiency and expedition in the handling of adjustments in rates and regulations. It became the practice of many railroad officials to disregard the jurisdiction of the state railroad commissions

and take up rate matters directly with these traffic committees. These committees have held no formal hearings, but have reported their findings through the regional committees to the Director of Traffic at Washington, who alone has power to render final decision. The shippers have frequently insisted that this has deprived them of their day in court, and that the rulings have not adequately taken into account local conditions and interests. On the other hand, Mr. Prouty, as Director of the Division of Public Service and Accounting, has declared that in all his experience with rate-making, extending over nearly a quarter of a century, there has never been a time when rate changes have been made so intelligently and so speedily as now, and that the practice of having shippers participate in preliminary discussions will in some form be perpetuated. Local feeling became articulate in resolutions adopted at the meeting of the National Association of Railway and Utilities Commissioners in October, 1918, in which the members demanded full authority on the part of the states and declared that in any event it was the duty of each state commission to exercise and maintain its authority to the extent which it might deem the public interest demanded. It declared further that "the Association is emphatically of the opinion that any plan for the future operation of the railroads should fully safeguard the powers of local tribunals, responsible to the people of the several states, with respect to rates, service and facilities intrastate in character."

During the war, the Federal Railroad Administration never squarely met the issue and never officially interpreted its powers. In practice, it initiated state rates and filed them with the state commissions "for information only." In matters of service, it asserted its complete authority. In January, 1919, the war having

ended, and plans being under way for returning to a peace basis, Director General Hines appointed as Director of the newly created Division of Public Service, Max Thelen, formerly Chairman of the California Railroad Commission, one of whose duties was to establish a helpful understanding with the state commissions. In February, after conference with representatives of the state commissions, the Railroad Administration announced its policy. Transportation systems under federal control were to continue subject to the lawful police regulations of the several states in matters relating to spur tracks, railroad crossings, safety appliances, train service, and the like, and it was to be the policy of the Director General to cause the orders of the state commissions to be carried out. Attention was called, however, to the financial condition of the roads, and it was assumed that expenditures would be ordered by the state commissions only after full consideration of the needs and difficulties of the United States in operating the railroads.

As for rate matters, the Directors of Traffic and Public Service were ordered, before authorizing important advances in rates, state or interstate, to submit them for advice and suggestion to the commissions in the states affected. Carriers were ordered, for the purpose of maintaining the continuity of state records, to file with state commissions, for information only, all rate schedules and annual and other reports required by state statutes. As to the division of authority over rates, the conference disagreed, and the Director General announced his purpose to expedite a decision at law by the appropriate tribunal. A case is now pending in the United States Supreme Court, on appeal from a decision of the Supreme Court of North Dakota, in which the latter court directed the issuance of a peremptory writ

of mandamus, ordering the railroads to desist from collecting on intrastate business any other charges than those on file with the State Board of Railroad Commissioners.[1]

The Future

To treat adequately all considerations underlying the future railroad policy of the country would transgress the limits of this paper. Nor would it be profitable, with new "solutions" of the problem appearing almost daily, to attempt an exhaustive analysis of the various reconstruction projects. It will be sufficient for the purposes of this article to sketch in outline those proposals that are the most significant either by reason of their inherent character, or of the position occupied by their endorsers, and to lay down some fundamental principles which, in the opinion of the author, should be embodied in any plan for permanent railroad control.

Of the various possibilities for the future, the first that comes to mind is permanent government ownership and operation. No plan embodying such a proposal has yet been promulgated. The nearest approach to it is the project of the railroad employees, which is government ownership with private operation. This scheme, presented to the Senate Committee on Interstate Commerce by Mr. Garrettson, and his attorney, in behalf of the four railroad brotherhoods and ten other railroad organizations affiliated with the American Federation of Labor, provides for the acquisition of the roads by the federal government upon the basis of a fair valuation, and the creation of a federal operating corporation, the stock of which is to be held in trust for the employees, official, and non-official. This corporation is required

[1] On June 2, the Supreme Court by unanimous decision overruled the decree of the North Dakota court, and sustained the war powers of the President.

to meet all costs of operation, and the net revenue is to be divided equally between the government and the corporation. The government's share is to be used for the retirement of capital, except that when this share reaches a fixed percentage of the gross revenues, the rates are to be reduced. The corporation's share is to be distributed as a dividend to the employees. The Interstate Commerce Commission is to retain its existing powers, and wage boards for the settlement of disputes are to be created, consisting equally of operating officials and employees. This plan has aroused relatively little public discussion, doubtless because it is difficult to consider seriously a scheme so obviously devised in the interest of a class. Until recently the brotherhoods have been officially opposed to government ownership; in fact, the chiefs of three of the brotherhoods are still opposed to it on general principles. But beginning with the passage of the Adamson Act in 1916, they have found Washington an increasing source of comfort and consolation, and the increases in wages during federal operation have come with such relative ease, as finally to convince them apparently of the wisdom of a perpetual alliance with the Federal Administration. However, it is by no means clear that this project has the support of the railroad employees as a whole, or even of the membership of the organizations signatories to it. In fact, there is evidence in the testimony of Mr. Garrettson that the leaders and their attorney are relying upon a support from the rank and file that has not yet been officially granted. Previous to its introduction, the plan seems not to have been indorsed either by convention or referendum. That railroad employees are not a unit in support of the project is shown by the appearance at the hearings of the president of the Order of Railroad Station Agents to

oppose the Garrettson plan. Certainly until the organizations have come out into the open, and given endorsement to the plan of their astute leaders, there is little ground for the claim made by the more radical labor groups that this project is an evidence of the growing demand of labor for representation in the control of industry.

Besides this halfway proposal for government ownership, there is little organized sentiment in its favor in this country at the present time beyond that expressed by the socialists. No railroad administrator, federal or state has advocated it; in fact, most of them have specifically opposed it. Shipping and commercial organizations in various sections have passed definite resolutions in opposition. The attitude of railroad men and the banking community is self-evident. The universality of this sentiment is striking, and is in contrast with an expression of considerable volume in favor of nationalization a few years ago. This overturn is obviously the result of the period of federal operation.

It was said at the beginning of this paper that the year of federal operation could not be accepted as an argument for or against government ownership, but what was then in mind was a final judgment based upon a careful weighing of all the considerations. The attitude of the American public at present does not rest upon any such painstaking examination of the evidence; it makes no allowances. The numerous hostile resolutions are the composite of many minds and many motives, in some cases expressing opinions designed to accomplish a definite purpose, in others merely registering a thoughtless impatience with an unsatisfactory situation. There is the natural reaction that follows a period of patriotic service and of altruistic endeavor, and an irritation at the deliberation with which adjust-

ments are being made. This attitude of mind is transformed into outright opposition by the inconveniences and annoyances and the deprivation of privileges to which travelers and shippers are still subjected. Shippers have been deprived of many services that they had come to expect as a matter of course under competitive conditions, like the tracing of their freight, assistance in obtaining rate quotations, and privileges in transportation, such as reconsignment. Many of these services might eventually be developed under federal operation; many of them could with difficulty be defended from the public standpoint. Then again, the lack of smoothness of federal operation, much of it inevitable, and the deplorable financial results, have been cleverly played upon by those who fear the extension of government authority, to discredit nationalization. The result is that this plan is definitely postponed and that the country is farther away from it than ever.

But putting to one side the project of government ownership, there still remains the question as to the length of time that war control shall continue. The Federal Control Act provided that government operation, should not last longer than twenty-one months from the date of the President's proclamation announcing the exchange of ratifications of the treaty of peace. However, the President might relinquish the railroads at any time that he might deem such action needful or desirable. Director General McAdoo with the approval of the President, presented a proposal for a five-year extension of the present control, a proposal that was later supported with great ability before the Senate Committee by Director General Hines. His general argument was briefly this. The period of the war has been wholly abnormal and the twenty-one months' period is too short in which to reach any sound judgment

as to the merits of unified federal operation. The impending transfer to private control will produce a state of unrest and uncertainty among the working force that will react unfavorably upon operation. The agitation in Congress for a permanent solution, the restlessness of the public in general and the imminence of the presidential election, will all be factors unfavorable to a satisfactory solution within the statutory period. An adequate program of additions and betterments cannot be planned and perfected during this interval, neither can the plans for the creation of economies through unification be fully worked out.

Outside the Federal Administration, this project appears to have met with no favor whatever. An unwillingness to submit in normal times to the character of control that the war necessitated, and which was in many respects arbitrary and autocratic, combined with an impatience to get back to a peace basis, is in part responsible for its cool reception. Then there is the fear partly genuine, that such an extended control would so crystallize the system that its permanence would be inevitable. The railroads have insisted that their financial relations and obligations would become such a serious burden, that they could not again be carried by corporations operating independently, and their goodwill as operating organizations would be destroyed. But however interested some of the arguments in opposition to the five-year extension may appear to be, the burden of proof for the extension of the extraordinary war powers of the President conferred by the Federal Control Act rests wholly upon its advocates, and their arguments have lacked the necessary convincing force.

At the other extreme from this suggestion is that of the immediate return of the roads to their owners. This

alternative was held out by the President in his annual message in December, 1918, as a warning against a failure to find a legislative solution. To this suggestion, the railroads are equally opposed. They insist that if their properties are returned without any plan, or any provision for proper adjustment of relations between them and the government, they will be faced with bankruptcy. They declare that their credit has vanished, and that it is not clear whether they can even collect under private operation the rates now in effect by order of the Director General. Their operating forces have been shaken, if not demoralized, and much time will be needed under their former chiefs for a restoration of their morale. Before transfer takes place, protection must be assured to the roads if the public service is to be maintained. Director General Hines, in reply, has assured the Senate Committee that the Administration, if it should decide to relinquish the roads, would pursue a policy of gradual transition, and would have naturally no other object than to protect railroad property in the interest of the public. Moreover, it is the view of the Interstate Commerce Commission that interstate rates now in force would remain in force until set aside in the usual way. So far as intrastate rates are concerned, while the outcome is not as clear, it seems probable that with a few exceptions, the state commissions would protect existing rates if public interest made it necessary. It seems probable, however, that no hasty return of the roads is to be made, and that Congress will take up for immediate consideration this greatest of our domestic reconstruction problems. It will be of interest therefore, briefly to outline the more important proposals for a restoration of the roads to private hands.

Director General Hines has advocated as a permanent solution of the railroad problem, the creation of a com-

paratively few railroad companies, six to twelve, with capitalization equal only to the real value of the property. This capitalization should have a moderate return guaranteed by the government, which should be sufficient to preserve railroad credit and attract new capital. In excess of this moderate return, earnings should be shared by the government and the railroads, and possibly by labor. The government's interests would be protected by representatives on the boards of directors. Regional commissions coextensive with each railroad system would handle local matters, subject to the final authority of the Interstate Commerce Commission.

The Interstate Commerce Commission has made proposals of a general character looking to an improvement in the situation, most of which are renewals of recommendations made in their annual reports. They include empowering the commission to prescribe minimum as well as maximum rates, removal of the existing limitations upon the power of railroads to coöperate, which would mean the permission to pool earnings and traffic and to agree upon rate schedules; federal regulation of security issues and the emancipation of railroad operation from financial dictation; the expansion of the common use of terminals and equipment; and the establishment of a coöperative relationship between federal and state authority. This last suggestion does not apparently contemplate any legislation for its enforcement, but rather the working out of a plan of harmonious coöperation through voluntary agreement.

The official railroad plan was presented to the Senate Committee by the Association of Railway Executives, representing virtually all the railroad corporations of the country. Their scheme separates the administrative from the judicial functions of regulation. It creates a

Department of Transportation with the Secretary as a member of the President's cabinet, to whom the administrative duties are entrusted. He has power to approve or disapprove rates, which are to be initiated by the railroads, and he may suspend them for not to exceed sixty days, and refer them to the commission for determination. He recommends general railroad policies to the President. He has power to reroute traffic, to readjust the use of terminal facilities, and to unify the whole transportation system in a national emergency. The principal function of the Interstate Commerce Commission is the review of rates upon complaint, and it is to be guided in its decisions by a statutory rule of rate-making laid down by Congress, which shall provide not only for the reasonableness, but also for the adequacy of rates. Wage costs are to be recognized in rate-making. Rates approved by the Secretary of Transportation are to be held presumptively reasonable. The Commission is to prescribe minimum as well as maximum rates, and to pass upon the relation of rates and upon differentials. Regional commissions are to be created under the jurisdiction of the Interstate Commerce Commission. Compulsory federal incorporation, with provision for consolidation after approval by the Secretary of Transportation, is proposed. There is to be exclusive federal regulation of all railroad rates and of the issue of securities. New construction is to require a certificate of convenience, and provision is made for the modification of the legal limitations upon pooling, rate agreements, and acquisition of interest in other carriers. A wage board consisting of representatives of labor, the railroads and the public is to be constituted under the Secretary of Transportation, and pending its investigation and report, no action is to be taken by

either side that would interfere with the movement of commerce.

A plan far less revolutionary in scope, which attempts to secure the same results without disturbing the character or form of our existing railroad system, is that submitted by S. Davies Warfield as president of the National Association of Owners of Railroad Securities. This plan calls for the fixing by Act of Congress of a minimum rate of return on railroad property, to be maintained by an adjustment of the rates. Earnings in excess of the fixed rate are to be divided, under the direction of the Interstate Commerce Commission, between the employees and the corporations, the latter to use their portion for railroad betterments. A national corporation, directed by trustees consisting of the nine Interstate Commerce Commissioners and eight railroad men, is to finance the present emergency and provide an agency to purchase equipment and handle problems of unification. There are to be regional commissions with appeal to the Interstate Commerce Commission, which shall coördinate their work with the state commissions, act as wage conciliation boards and in coöperation with the Interstate Commerce Commission, supervise the issue of securities.

Other plans embodying in many cases policies similar to those described, have been suggested by individuals and organizations, both in the Senate hearings, and in occasional addresses and articles, all seeking in one way or another to remove existing obstacles to the provision of an adequate transportation service, but those that have been analyzed are sufficiently typical to indicate the general trend.

In conclusion there are presented in summary form the principles that in the judgment of the writer should be incorporated in any scheme adopted, if we are to

secure under private operation the public service that we desire. Any adequate discussion or defense of these propositions must await an opportunity for fuller treatment.

1. A problem that has long been recognized, and that is in the mind of almost every one who has discussed the situation, is that arising from the existence in the same territory of roads unequally equipped to compete with each other. This inequality may be due to natural causes, such as the fortunate or unfortunate location of the original line, or to the fact that one road has been the victim of financial manipulation and has suffered from unprogressive management, while the other has escaped both. But whatever the cause, the fact remains that if both roads charge the same rates for the same service, and that is of course a necessity, then a rate that is high enough to meet the financial requirements of the weak road will be too generous for the strong one, and a rate reasonable for the well equipped road will put the other out of business. For the very obvious reason that the Association of Railway Executives includes both kinds in its membership, it did not squarely meet the issue, merely suggesting that a fair average rate should be charged for the service, and that roads that could not live under such rates would eventually be absorbed in the larger roads. My own belief is that voluntary consolidation will not succeed, that there must exist more than the permission to consolidate, that it will not be to the interest of the more prosperous roads to dilute their earnings, and to carry the burdens of their less fortunate neighbors. There should be compulsory consolidation of the railroads, under federal charters, into a relatively few systems, in such a way that the earnings of weak and strong roads could be pooled and adequate service assured in the sections now inadequately and inefficiently

served. This does not necessarily mean a regional division of railroads into groups of uniform size. In fact, this would be undesirable if as a result it eliminated all competition in service, a valuable incentive in private operation. Rather should it create large systems, constructed to meet traffic and commercial requirements of the different sections of the country, with consolidation carried far enough to do away with wasteful competition over inadequate and roundabout routes.

2. These federally constituted corporations should be organized with a capitalization based as nearly as possible upon actual value. The government should guarantee a minimum return to the railroads upon their property employed in the public service, and should permit a somewhat higher return. Any excess earnings beyond this legal maximum should be distributed among the government, the railroads, and the employees. The government's share should be applied to meeting the guaranty on roads that have failed to earn it. This guaranty would be expected to restore the credit of the railroads and enable them to raise the necessary capital for extensions and improvements. Permission to take for their own benefit earnings in excess of the guaranty should furnish the necessary incentive to efficient operation.

3. All security issues should require the previous authority of the Interstate Commerce Commission, which should pass upon the proposed use of the funds and oversee their expenditure. This provision, together with the government guaranty of earnings, would go far to eliminate the evils of banker interference in railroad management. The banker will still have his function, but his strangle hold will be released, and he will be deprived of the pastime, occasionally indulged in, of wrecking railroad properties for the benefit of himself and his friends.

4. All rate-making power, state and interstate, should be placed under the authority of the Interstate Commerce Commission, the commission to have power not only to review rates on complaint, but as now to take the initiative in an investigation leading to a revision of rates. There should be left to the states all police powers relating to the control of operation within their borders, but the transportation industry has become so essentially national in character that state interference with rate-making is now hampering in its effects and largely unnecessary. In this connection, it is suggested that the period of suspension of rates now possessed by the commission is unreasonably long when all factors are considered and might well be shortened. Provision could be made for extension of the time of suspension when protracted hearings covering schedules of rates for wide areas were involved. The commission should have power to prescribe minimum as well as maximum rates and to determine the relation of rates.

5. A statutory rule of rate-making, such as that suggested by the Association of Railway Executives, should be adopted by Congress as a guide to the Commission. It should declare that rates should not only be reasonable and nondiscriminating, but adequate to provide a safe and satisfactory service, to ensure adequate wages to employees, and to provide a level of earnings that would protect the investment and attract the new capital needed in the public interest. This rule is a natural accompaniment to the government guarantee of a minimum return. The two should go hand in hand. Altho many insist that the power of the Commission is sufficient under existing law to meet all the requirements of this proposed rule, there is evidence in decisions of the Commission that at least certain members of that body are inclined to limit their purview to the question

whether proposed rates are reasonable or not, and are disposed to hold that the general financial condition of the carriers is a matter beyond their jurisdiction.

I am not one of those who believe that all the financial troubles of the railroads are to be laid at the door of the Commission. In fact, I believe that regulation by the Commission has been of a very decided net advantage. Yet greater generosity on its part might well be encouraged. The credit situation of the railroads is the resultant of many causes, the relative importance of which it would be difficult to estimate. The variety, extent and conflict of state regulation has been an important factor. The persistence of Congress in maintaining and strengthening all laws for the preservation of the competitive principle has been a hampering influence. The exhaustion of the more attractive forms of railroad investment, such as first lien bonds, and the increasing attractiveness and stability of other forms of investment have diverted capital funds. There is the often conscienceless and even criminal character of banker management, which has wrecked particular properties, and placed all railroad securities under suspicion. Railroad officials and directors could have done much to offset this influence, had they been free to denounce these instances of financial jugglery, to show that they were isolated and exceptional cases, and that the large proportion of railroad finance was handled on a sound and honest basis. Instead, they have injured their own credit by constantly insisting that they had none. Finally, there is the disparity between income and expense, which has had its origin not in the perversity of the Interstate Commerce Commission, but in the general upward movement of prices, a movement that has affected everything the railroad buys, including labor, but has left untouched the prices at which the railroads' own product is sold.

6. The jurisdiction of the Interstate Commerce Commission should be extended to give it greater power over construction and service. The roads, being federally incorporated, should be permitted to make extensions only after the issuance by the Commission of a certificate of public convenience. Power should rest with the Commission to develop greater coöperation in the use of terminals, in the pooling of equipment, and in the elimination of unnecessarily long hauls. With them should reside the power to approve pooling and traffic agreements, if they seemed desirable from the public standpoint, altho the plan of consolidation here suggested would probably render such agreements to a large degree unnecessary.

7. Provision should be made, through the creation of a wage board, for the orderly settlement of wage controversies that cannot be adjusted on the individual railroads, and the law should forbid any interruption of commerce or any organized preparation therefor, during the period of investigation and report. Such a board should not be constituted after the fashion of an arbitration board, with one member representing the public, who inevitably becomes an umpire between contending factions, and who by the very necessities of the case is incompetent to pass upon the complicated issues involved. Such a board should be constituted equally of employers and employees, and their decisions should be the outcome of friendly and thoro discussion.

8. Finally, it should be clearly recognized by railroad men as well as by Congress that we are legislating for a public service, that the public interest is not to be considered merely as coequal in importance with the interests of private capital invested in the undertaking, but that it is a predominant interest. This period through which we have just passed was not a test of

government operation. However, the American people, in turning the roads back to their owners have not finally disposed of the question. Rather are they putting private operation on trial. Unless the owners and managers of these properties fully recognize the obligations that again rest upon them, and develop a passion for public service that subordinates to it every other consideration, the demand for nationalization is bound to revive.

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NORMAL PRICE AS A MARKET CONCEPT

SUMMARY

The normal price concept reflects a constructive purpose of economic theory, 632. — Margin of profit-making entrepreneurship a test of normality, 633. — Need of a market-distribution normal particularly in the case of extractive products, whose supply is not expansible during certain periods, 636. — This implies merely some change of emphasis and complementing of the equilibrium theory of value, 638. — The perfect competitive market price really a normalized price, 639. — The distribution normal as a test of the efficiency of our marketing arrangements, 640. — Relation of cross-section to longitudinal view of the market, 641. — Market normal of fixed-supply goods, 642. — For farm products a "season's normal," 643. — This may undergo change as the season progresses, 644. — Recapitulation, 648. — Three phases of the market normal, 649. — Interplay of the market-distribution and production-adjustment concepts of normality, 650. — Practical usefulness of the above theory, 651.

THE differentiation of a market price and a normal price concept runs back as far at least as Adam Smith, and is preserved in the writings of the great majority of modern expositors of economic principles. Some such idea is practically indispensable in any formulation of the subject which purposes to make economic theory a constructive force in our social life and to set up standards for the appraisal of current economic processes. All actual prices are, of course, market prices, and the theoretical concept of a normal price merely sets forth some ideal of price adjustment toward whose achievement we may strive in ordering the practices and shaping the institutions of our production and exchange system. Perhaps, on the whole, we should fare better if we were to limit ourselves to expressions such as "the normalizing of market prices" or "normality of prices,"

thus indicating clearly that so-called normal prices are not some separate order of prices made outside the market, but are merely market prices which fulfil (or, if attained, would fulfil) certain theoretical specifications.

The test of that normality has been (in our price-motivated society) the adequacy of the price paid in the market to cover a wage which would secure the needful labor, interest which would secure the needful capital, and the necessary expenses for the purchase of raw material and the payment of insurance, taxes, and the like. All this, however, runs in terms of the adjustment of production to conditions of natural resources, human agents, technique, organization, or other factors of production, and (in its second and third phases) [1] of re-adjustment to changes in these conditions, and hence costs, of production. In short, writers have habitually given us a production-adjustment concept of price normality and have generally had their minds filled with industrialized processes of production, in which the flow of goods is continuous or, at least, has its stoppings and startings, its expansion and curtailment, largely under control toward the end and purpose of making supply such as to command a remunerative price.

This is all very well so far as it goes. But the concern has been too exclusively with the normality of supply conditions, and little or nothing has been said about the normality of the demand which comes to effective expression in the market, or concerning the adequacy of the market mechanism to bring about normal adjustments of actual supply and actual demand conditions. The stark cost-of-production concept of normal price is insufficient to the economist's need in attacking the

[1] I. e., (2) long-run normals, based on a supply which "can be produced by plant which itself can be remuneratively produced and applied within the given time," and (3) "*secular* movements of normal price, caused by the gradual growth of knowledge, of population and of capital, and the changing conditions of demand and supply from one generation to another." Marshall, Principles of Economics, p. 451.

problem of market systems and methods as a factor in price determination. And this inadequacy is particularly evident in the case of those extractive products which are not produced by highly industrialized processes and for which, therefore, the conditions of supply are highly adventitious. Gold during the nineteenth century would furnish an excellent case in point, were it not that its entanglement with monetary systems complicates its value phenomena unduly. The present writer's interest lies in the field of agricultural operations, and here we may find ample illustrations for our purpose.

The production of farm crops is subject to expansion or contraction of acreage, the enthusiastic propagation of plants and animals or the disheartened slaughter of livestock and uprooting of orchards. Likewise, the farmer may neglect his crop in midseason and even "let the weeds take it," or he may give it extra cultivation, fertilizer, or irrigation; animals may be "forced" for maximum growth or turned out to fend for themselves — all this in response to the inducements or discouragements which the farmer sees in the trend of market prices. These facts give us what basis there is for the application of current theories of normal price to the farmer's business situation.

But this is not the whole story. The farmer's choice of crops and his determination of the acreage of each having been made irrevocably at planting time, the weather enters as an erratic modifying factor at every subsequent stage of the productive process. Whatever the farmer's intentions, this is the final arbiter, deciding what volume of products shall come finally upon the market. Furthermore, that output, however ill-matched to buyers' needs, comes to market, thanks to the seasonal character of the industry, in some relatively

short harvest period — a fixed supply which cannot be increased until the whole long process of the suns has been gone through again, and whose flow upon the market can be checked but little even tho prices be sliding below the marginal or, indeed, the average cost of production. Even if some of the product be held back in local storage, its existence is known and discounted in the market, and prices must fall below the cost of harvest and marketing before it will pay the individual farmer to abandon a crop already grown.

These facts raise an entirely different, but highly important, question of normal adjustment, viz., that of a fixed supply to a given schedule of demand. Every price situation raises an issue of internal or market-distribution adjustment as well as an external or production adjustment. Even tho a given supply situation be highly abnormal so far as the future trend of profit-making production is concerned,[1] it might conceivably be adjusted perfectly within itself, so that every consumer secured his fragment of supply at a price no greater than that actually necessitated by the ratio of the total stock to total effective demand (transportation cost being assumed), and such that every producer secured a price which represented the full value of his produce in view of its scarcity in that particular year.[2] Such a concept of normality, in fact, lies at the very heart of our whole problem of rational market distribution, even as the older idea of a cost of production normal lies at the heart of the problem of rational adjustment of the productive process.

[1] E. g., a famine price, which would stimulate production and lower exchange values in the future; or a ruinous overproduction price, which would discourage further effort in the given line and in time raise the demand-supply ratio.

[2] With, of course, a similar limitation on the opposite side of each of these propositions. Obviously, this does not touch the issue as to whether the producer is thereby getting less than his cost of production or a fat profit above it.

Changing conditions are revealing the insufficiency of the emphasis which economists generally have placed upon the former of these phases of our price discussion. The distinctive character assumed by the economic exposition of any given period tends naturally to conform to, and hence be limited by, the run of attention of the epoch out of which they grow. The science of economics has been born and reared in a day wherein men have been concerned with the coming of the Industrial Revolution, the development of capitalism, and the exploitation of new natural resources. Consequently we have been concerned very largely with the problem of profit-seeking entrepreneurship and inclined to scrutinize closely the effectiveness of our business organization to equalize profits on all the various margins of economic endeavor. Hence a cost-of-production normal of prices.

Today, however, the burden of exchange distribution, under conditions of world trade and intense geographical specialization in our productive organization, becomes so heavy that our interest is to a considerable extent shifted from production to marketing problems (i. e., from the creation of form utilities to the creation of time and place utilities) and we feel the need of a careful statement of a market distribution normal of prices. In securing such a statement, we need merely to develop certain ideas always implicit in the equilibrium theory of value, but not made sufficiently explicit in the expositions of value and price as found in our college texts or even in more advanced theoretical works.

An entirely orthodox and very common method of procedure has been to state that market prices are prices actually paid in the market,[1] but to illustrate the

[1] Cf. Adam Smith, "The actual price at which any commodity is commonly sold is called its market price. It may be above or below or exactly the same with its natural

process by which such market prices are evolved by assuming conditions of complete dissemination of information and mobility of goods, in brief "perfect competition." The result has been that what was described was not an actual price, but a highly conventionalized price such as would exist if our markets were brought from their actual abnormalities of supply and demand to a normal adjustment of stocks to market demands.

Such a procedure has often been followed, no doubt, with the laudable intention of making the matter more simple for the student. But it is the writer's experience that, on the contrary, the student finds unreal and confusing this description of a market situation admitted by the expositor to exist only in the mind's eye. It seems better practice to take actual prices from real markets and give a practical worth to their analysis by seeing what is the individual peculiarity of their situation either as concerns supply or demand conditions, which causes the price at which goods change hands to be different from those in other markets dealing in the same wares. In other words, taking the actual price at which some units of supply are equilibrated with some units of demand, we proceed to test the normality of that price equation by examining its relation on both the supply and demand side to the whole supply situation and the whole demand situation to which it is connected through the mechanism of our market system.

price"; and J. S. Mill, "The temporary, or market value of a thing, depends on the demand and the supply; . . . and the value always adjusts itself in such a manner that the demand is equal to the supply. . . . The values and prices, therefore, to which our conclusions apply are mercantile values and prices; such as are quoted in prices-current; prices in the wholesale markets, in which buying as well as selling is a matter of business; in which the buyers take pains to know, and generally do know, the lowest price at which an article of a given quality can be obtained; and in which, therefore, the axiom is true, that there cannot be for the same article, of the same quality, two prices in the same markets." Many more recent writers have failed to impose equally discreet limitations upon themselves and hence have created the impression that their discussion of a conventionalized market price is supposed to apply to all prices actually arrived at in buying and selling operations.

Such an exposition of prices as market actualities which, however, may and should be tested as to the normality of their adjustment one to another in a great distributive system has been hindered rather than helped by some of the definitions of "market" which have been developed to take account of the expansion of our trading spheres. Much has been said about central markets and national markets and world markets, but a good deal of confusion exists among different writers as to whether we shall say that the world market means, for instance, in the cotton trade, Liverpool — a place where local bargains are made under the influence of world-wide forces. If such be the meaning of the term, Camden, Arkansas, is also a world market, since cotton is there bought and sold upon the basis of telegraphic reports from the nearby spot and future markets of the United States, which in turn are, through constant exchange of news and the making of transactions, kept in market contact with foreign trading centers. If, on the other hand, the word market means the whole "field within which the forces determining the price of a particular commodity operate," then, in the case of goods widely traded in, the old dictum "only one price in the same market at a given time" cannot possibly remain true except in the theoretically possible but highly improbable event that all trading points at some moment struck a range of mutually consistent prices (which would constitute for each of them the market-distribution normal at the moment). As a matter of fact, all actual markets, i. e., trading places, are inevitably local, and every market price partakes more or less of local characters, whether they be those of the great metropolis or of the most remote hamlet. But these local transaction centers are, furthermore, subtly fused into price-influencing relationships with each

other throughout the commercial sphere within which the commodity is dealt in.[1] Just how perfectly this is done depends upon the perfection with which our market system does its work of equilibrating market demands and producers' stocks.

However much the exchange machinery be oiled, it is not humanly possible for friction to be entirely eliminated. Time and distance make it impossible that all the buyers and all the sellers can ever get together in that complete and perfect competition which is necessary to secure "one price[2] in a market." Obviously, the statement is true enough as applied to prices on the Liverpool and New York Exchanges. But, be this price in

[1] Clearly we are somewhat handicapped here by the limitations of our vocabulary, being distinctly in need of two words, one to indicate the local trading point which is, except in the unusually isolated case, part of a larger perhaps even international trading sphere; and another to indicate this whole market compass, of which the local trading centers are component parts. In the absence of two such distinctive terms, we must be careful not to confuse our idea of market sphere and market center. Such confusion is no more necessary than it would be to allow our idea of a circle to be dominated by the center and neglectful of the circumference and intervening area. In the making of world prices the peripheral transactions of local producers' markets are no less significant and effective than the central trading at Liverpool, New York, and Chicago. While it is true that, through the dissemination of their quotations, a tide of influence moves downward from these larger markets to the most remote scenes of buying and selling activity all over the world, it is equally true that all these remote trading spots send their own tide of influence upward to constitute the sum total of the supply situation out of which the Liverpool, New York, or Chicago price must be made. The local cotton buyer brings a certain demand to expression in his market through the offer of a price adjusted by suitable differentials to the quotations of Liverpool, New York, and New Orleans. But this demand price is endowed with no power to requisition the stocks of local producers. The supply which comes forward at this price level may not be sufficient to keep the necessary stream of cotton moving toward the great market centers, and thus the local market, by drying up the source of supplies, forces the revision of bids and a new set of quotations at the world center of trade. The desire of a small group of wilful men in the New York cotton market to dictate a world price for cotton in the fall of 1914 and in 1915 was repudiated in the little Texas towns along the Brazos quite as effectually as the autocratic presumption of Prussia to make the world's maps was checked along the Marne at about the same time. But if the international trading center fails of bringing prices throughout the whole producing and marketing area into harmony with its own ideas of value, then we must be very cautious of the way in which we apply the older concept of market price to the newly attained realities of a world trade.

[2] The writer does not, of course, mean in such an expression that prices to be one over a wide marketing area would have to be the same in dollars and cents. Equivalence, after allowing for cost of handling, is what is meant. We even assume the propriety or competitive equalization of these charges — a matter which in practice we can by no means afford to pass unchallenged.

Europe equalized never so well to this price in America, it by no means gives us one price for the markets of the world. What of disparities among local markets and between them and the central market? Has the price been so neatly adjusted in Baroda, Che-Kiang, Assouan, and Cabin Creek, Mississippi? It comes down to the point, strictly speaking, that such a formula matches concrete reality only if the word market be defined as meaning one buyer and one seller or a compact group which, by the method of auction or otherwise, are enabled to bargain as one. Only so can we guarantee that there will be but one point for the meeting of the minds of the parties to make a price contract. With every enlargement of the scope of our market which weakens the perfect solidarity of the buying or selling group, there results a multiplication of equilibrium points at which parts of the stock of goods are likely to change hands, as a diversity of marketing circumstances and arrangements cause different effective supplies to come forward out of the total available stock to strike an equilibrium with certain discrete fragments out of the total demand schedule. The "one price" becomes increasingly a theoretical ideal which, to be sure, *may* be attained to by accident or good design, but from which actual market prices ordinarily depart by a wider or narrower margin.

Only relatively few of our price exchanges are mediated by such centralized, public, and competitive agencies as the stockyards, produce exchange, fruit auction, or similar highly organized mechanisms of trade. But such a situation is the only one expounded in much modern as well as nearly all classical discussion of market price. Herein is manifest the poverty of our theory, if it fails to set forth the persistently dual nature of the price-making process, consisting as it does of

local, actual, and in varying degrees, abnormal market prices, and of ideal or normalized market price concepts, in which producers' stocks are adjusted to consumers demands through the mediation of a perfectly functioning distributing mechanism. The market price which one finds in many economic textbooks is one already considerably normalized as compared with the widely varying prices in remote, ill-informed, and imperfectly competitive trading spots where many, if not most, primary exchanges are made. But these are just the market prices which business men are dealing with, and the economist can hardly be content to leave so large and significant a part of the exchange field outside the ministrations of his value theory.

We are concerned to test the normality of the prices which scattered producers are receiving or which local buyers are paying, and this both theoretically as a means of appraising our marketing system and practically as a means of making dealers' profits or of gauging our operations as private buyers or sellers. In the case of commodities (here farm products) whose market is not fed from a flowing stream but must draw from a reservoir periodically replenished with varying degrees of fullness, the test of normality at a given moment is not so much that of the adjustment of the rate of flow of the commodity from a producing plant as it is the distributive adjustment of that fixed volume of goods uniformly in proportion to market needs so that equivalent effective demand meets equivalent supply.

If market price "is a momentary or cross-section view" of the economic process, we should see to it that our section is complete and accurate, since we are concerned to see upon this crosscut surface the relation of one part to another at a moment, just as we wish in the longitudinal section to see the relation of one to another

over a period of time. This is precisely what the trader has in mind as he seeks a guide for his merchandizing operations. He attempts to see as fully as possible what is the condition of the whole market, as a basis for judging the acceptability of a particular price offer in which he is concerned. Is it "in line with the market?" This is his prime consideration. If as low as or lower than what he estimates to be the normal adjustment in view of all the supply and demand conditions, he will buy for his own use or from speculative intent. If "out of line with the market," as being above the exchange ratio which he conceives to be the market normal, he will cease buying so far as his consumptive needs permit, or will sell short for a future profit in the day of readjusted prices.

It is evident, further, that if this idea of a distribution normal of price under circumstances in which supply is temporarily fixed be kept in mind, we may proceed to talk also of the normal price of goods which have no rate of supply, whose volume is permanently fixed, which are, in short, non-reproducible. Such are Old Masters, rare editions, natural curios, and land. By abandoning the old cost-of-production limitation upon his normal price concept the economist may talk without shame of what the business man is constantly making his guide of action and speaking of intelligibly and correctly as the normal price of goods which have no cost of production.

What is the normal price of land? Why, clearly, the price necessitated by the adjustment of society's needs to a limited supply. If through the blindness of the public or the lack of shrewd real estate brokers, the demands for building-room pile up unduly in certain sections, while other suitable tracts are vacant or but poorly employed, the price of the former units stands

distinctly above and of the latter distinctly below the equilibrium point which would be struck were demands fitted to the limited supply upon a rational basis. In other words, the dealers in land have failed to perceive what was the normal adjustment of the good in which they deal, or they have been unable to effect it. On the other hand, we all know of clever real estate developers who have accumulated wealth by buying land which they have found available at a price below its normal as judged by the ratio of demand to the available supply and who have therefore found or developed a market at, or at least nearer to, that normal figure.

Similarly for old paintings, books, coins, or other objects whose means of production no longer exist. If an unknown painting by some great artist, now dead, chances to come to light in some attic or storeroom, and no one is there to apprise the lucky finder of the value which others set upon the canvas which he has unearthed, he is likely to sell it, if at all, at a figure far below the normal exchange rate which the art world puts upon this limited-supply good. Even after the picture gets out into the world of connoisseurs it will not have attained to its full normal value until such time as all potential buyers of such objects have become aware that it has been discovered and proved genuine and have had an opportunity of making their bids for its possession. Here as elsewhere, it is only when the mechanism of the market has succeeded in actually equilibrating total supply against the whole of effective demand that the resulting prices can be regarded as normal from the standpoint of market distribution.

This, as already mentioned,[1] does not imply that the price of such fixed-supply goods as are distributed far

[1] See footnote 2, p. 639.

from their place of production, and whose costs of transportation bear a relatively high ratio to the selling price should be priced at exactly the same figure in all those markets; but it does mean that the prices paid by the several buyers should not differ by more than those costs of transportation and allied charges. Nor does it mean that the price shall remain unchanged throughout the whole time in which the supply is fixed,[1] for there are carrying charges which must be added. However, the variations in the price of wheat or similar seasonal products from harvest time to the coming of the next crop should not vary by more than the amount of such storage, interest, insurance, and other charges. That is, the whole course of the season's distributive activities should be discounted in the market normal of any particular moment. In making their price adjustments at the beginning of the crop movement, both buyers and sellers are aware that not the whole of the season's yield is to be equated against the moment's demand. What each is trying to ascertain is what will be the equilibrium point of such a supply as nature has vouchsafed with such a demand as shall actually transpire. The more extraordinary the crop failure or the more unprecedented the year's abundance, the harder will it be for those on either side of the market to arrive early during the crop movement at what will be the "season's normal." Dealers know only that part of the demand schedule which they have previously explored. If unparalleled abundance presages a marked fall in the price, dealers are uncertain of the extent to which new uses for the commodity may develop and thus check the neces-

[1] In the case of agricultural products, with which we are primarily concerned, the use of the expression "fixed" supply is by no means entirely satisfactory, but seems to be necessitated by the demand for brevity. Actually the stock is, of course, dwindling as the season's consumption proceeds, but the supply is fixed in the sense that the rate of production cannot at the time be readjusted to relieve an existing scarcity or redundance.

sity for making extreme concessions in price in order to move the whole stock. Likewise, if scarcity dictates a high price, they are forced to guess how high it can rise before substitution will so impair demand as to leave them without the necessary number of buyers.

Under such circumstances, the professional trader and such producer and consumer groups as act with sufficient unity to give them weight in the market will seek to use every factor of uncertainty to warp prices as far as possible in the direction favorable to themselves. If both parties are in a position to back their market judgments to the limit, e. g., by holding their stocks off the market or by refraining from the purchase of supplies, the true supply and demand situation will shortly unfold itself, and an approximation at least to the distribution-normal will be brought about. If, however, one party be for one reason or another in a weak bargaining position, by virtue of his immediate need either to buy or to sell, the price may be thrown into a highly abnormal adjustment. This was clearly illustrated in the cotton crisis of 1914 and 1915. With the outbreak of the European war, the volume of demand both at home and abroad became highly problematical. Buyers at once tried to use this fact to their own advantage, and did indeed effect a severe depression of the market price level. There are always a large number of tenants and sharecroppers and not a few farm owners who must sell their cotton as soon as ginned, in order to pay pressing debts and provide for their own living expenses. This "distress" cotton continued to be dumped upon the market even when the price was forced as low as six or seven cents a pound. But bankers and merchants of the cotton section soon perceived that their own interests were jeopardized by this crowding of the price below what they conceived to

be the season's normal. As a result, they stepped in and urged farmers to hold for ten and a half or eleven cents and at the same time set about ameliorating the credit and storage difficulties so that this holding would be possible. Through the bankers' associations of the cotton states, acting with the Federal Reserve Board, facilities were provided whereby cotton could be warehoused and immediate needs financed on warehouse certificates. Once the flood of distress cotton was checked, the price rose to ten, and later, above twelve cents per pound.

This simply bears out the oft-repeated observation that speculative operations, whether in grain, cotton, eggs, or other storable products, can permanently succeed only in so far as they move with and not against the tide of actual underlying market conditions. This might be expressed by saying they prosper only as they work to draw prices toward the equilibrium point of the season's normal instead of trying to jockey them into a position off that actual center of gravity. This was well illustrated in Leiter's sad fiasco and Patten's successful *coup* in wheat.[1] At the same time, we should remember that the distribution normal of a seasonally fixed supply, even in which the whole course of the marketing season had been discounted by dealers and others, may change from time to time, as the factors upon which the price equilibrium has been predicated are altered by some accident or unforeseen change, before the whole distributive movement has been completed. Thus the normal level may be raised by the destruction of a significant portion of the stock through the burning of elevators or warehouses, the sinking of ships, the devastation

[1] The same point might be made in connection with the price of labor. A nice sense of what is the normal adjustment of the labor market at the moment tells the competent labor leader when the mere threat of a strike will produce results and guards him against the actual calling of a strike at a time when the supply and demand ratio in that particular class of employment would foredoom it to failure.

wrought by floods, or (particularly in the case of potatoes, apples, and similar products) the inroads of insects or fungus enemies of the stored goods, extraordinary heat or cold, and the like. It may be lowered by the advent of some depressing influence upon demand, such as the decreased purchasing power of some important section of the consuming public, due perhaps to unemployment or the lowering of wages. On the other hand, its level may be advanced by the education of the public concerning the merits of the given commodity, or even through the changes of fashion or the spread of a food fad.

The war has given us an unusually lively appreciation of the effect of such influences upon both the supply and the demand side of our price adjustment problems. All that need be said here is that the price which is normal today becomes abnormal in terms of the equation of tomorrow's altered supply to the predicted demand or of this known supply to a suddenly expanded or contracted demand. Obviously the force of such changes cannot be instantly transmitted to every local trading center, but it must be the test of an adequate market organization that the fluidity of both supply and demand be kept at the highest possible point, so that the sudden increase of demand at one point be met by the prompt drawing of supplies from other places in proportion as their supply-demand ratio has given them a lower level of price; and that any relatively plethoric supply, instead of exerting its depressing influence wholly upon the local market, shall be so redistributed as to dissipate its force in the lowering of the price level of all markets uniformly. Evidently, the action of shrewd traders or efficient marketing organizations and the effect of such a market news service as that being developed by the United States Department of Agri-

culture are potent forces operating in this direction, but with a notable difference in their effects. The private agency seeks to derive the maximum personal profit from its operations, and whatever corrective readjustment takes place is incidental, whereas the public intelligence service aims primarily at forestalling that abnormality of price out of which the professional trader would otherwise extract a profit-surplus.[1]

In summary, then, all prices may be represented as constituting a price body of three dimensions, its length connoting the time phase and its cross section embracing all prices for the given article at a moment. All these are actual or market prices, effected by the equating of some units of supply with an equal volume of effective demand. But every such price is to be appraised ideally as to the degree of its normality measured in terms of a perfectly functioning economic process. This critical examination in practice does and in theory should concern itself with two matters, not merely the proper adjustment of production for the market, but likewise with the proper adjustment of distribution in the market. Market adjustment normality demands that upon any cross section we shall have prices at a moment so adjusted to each other, rationally and consistently (in view of market charges necessary with existing equipment) that all supply and all demand units shall count each for its proper weight in the price equilibrium.

For intervals of time within which conditions of supply are fixed, the distribution-normal demands that time differences shall not be greater than those necessitated

[1] In the absence of such informational service, the consuming public is likely to be held up to a high level of price on the justification of local scarcity, at the same time that the producing section which has enjoyed a good growing season is being held down to as low a level as possible on the basis of that local abundance. The quick dissemination of thorough and accurate knowledge concerning market conditions which sometimes change rapidly and radically is necessary if prices are to be kept anywhere near their distribution-normal.

by carrying charges or justified by changes which have come about through the loss of part of the stock or through modifications in the demand. For agricultural products, the " season's normal " predicates the correct discounting of such conditions over the market distribution period until the next harvest but, where new factors are introduced during that time, the prompt revision of price schedules. In this longitudinal section are revealed also the alignment and realignment of prices with costs of production, whenever opportunity offers to increase the profitable or decrease the unprofitable line of production. Marshall has pointed out three phases of the production-adjustment normal of price, viz., short-time, long-time, and secular movements. A similar threefold division might also be made of the distribution-normal concept, as follows:

I. Prices normal in the sense of being the best equilibration of supply and demand possible with the imperfect market equipment of the present.

II. Prices normalized through adjustment by a market mechanism remodeled in the light of a previously unsatisfactory price situation. The improvements of storage and transportation facilities, better financial arrangements, and more efficient commercial organization of trading agencies exemplify this phase clearly in the case of agricultural products during the last few decades.

III. Prices readjusted through slow-moving changes in the market attitude of both producers and consumers, such as the education of sellers in the fundamental principles in accordance with which the price-making system operates and, more concretely, the character of demand in those places to which they look for a market; or changes in the standard of living, the rovings of taste and custom, and the education of buyers as to the in-

trinsic qualities of the goods which they consume. The study of the marketing of farm products, the teaching of home economics, and the Food Administration have contributed to our understanding of this third phase in recent years.

In II and III there is revealed a distinct *rapprochement* between the market-distribution and the production-adjustment concepts of normal price. We are well aware that readjustments in production react upon the distributing machinery, while every modification of the exchange process exerts a reciprocal influence upon the productive organization. Thus, defects in our marketing system may so depress the price of a given commodity at some points as to cause returns to fall below the cost-of-production normal, thus forcing certain of the less favored producers out of the field, at the same time that the normal equilibrium of existing supply and demand would set the price at a point high enough to continue them in the business on a prosperous basis. Or, on the other hand, an abnormal exchange situation might so inflate prices as to retain producing units whose withdrawal would be indicated, were the normalizing influence of profit-seeking adjustment on a cost-of-production basis not obscured by this abnormal market situation. Each change in production creates a new market problem; each readjustment of the exchange mechanism alters in some measure the terms of the producer's problem.

There should be no discontinuity in our concept of the normalizing process, from the most local and ephemeral adjustment of even one unit of supply to one unit of demand, up through the harmonizing of the single value estimate so struck with others elsewhere, so that the whole stock may be valued in exchange upon a consistent basis; from this to the yet remoter idea of mak-

ing this level of values fit harmoniously into the whole scheme of market values by being made (through the checking or acceleration of the rate of supply) to correspond with the market prices of their component cost goods. So to complement the cost-of-production with the analagous market-distribution normal is not to present merely an engaging abstraction for the theorist to toy with but, on the contrary, to enunciate the value principles which must govern the practical endeavors of business men in adjusting our machinery of market production and exchange. It expresses the essential truth which, sometimes crudely and of course intuitively, the farmer has had in mind when demanding relief from the erratic fluctuations of the markets in which his products are sold. It has lain back of the efforts of the Food Administration and other agencies to "stabilize" values during the war period. Likewise, it must underlie whatever truly sound work shall be done in the future toward improving the conditions of our agricultural organization, through equalization of shipments, dissemination of complete market news, intelligent proportioning of producers' efforts and outlays, upon which a truly healthy development of the industry must depend.

It is a highly practical proposition because it is sound economic theory.

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ON STABILIZING THE DOLLAR

SUMMARY

Inconveniences of an unstable value unit, 652. — Dr. Fisher's proposed remedy, 652. — Would his goods standard be stable? 658. — Unstable relation between goods and labor, 660. — Value dependent on human estimation, 661. — This not stable as to goods or as to labor, 665. — Can present monetary units be stabilized? 667. — Control of issues of paper money, 667. — Control of gold production, 668. — How would Fisher's plan affect the public debt? 670.

MOST of us have learned from experience that a dollar will not buy so much as it used to buy, but many of us remember a time when our experience was just the reverse of this; for it is scarcely twenty-five years since a period of falling prices came to an end. Then debtors whose contracts ran for a number of years were at the disadvantage of having to pay back dollars of larger purchasing power than was possessed by the dollars they had received. Now creditors, under like circumstances, have reason to complain that the dollars repaid to them have a smaller purchasing power than had the dollars which they lent; and people whose earnings have remained stationary, or failed to increase as fast as the prices of commodities, have found it increasingly difficult to pay their bills.

Dr. Irving Fisher in a pamphlet issued as a precursor of his forthcoming book on Stabilizing the Dollar in Purchasing Power, has expounded his plan for putting an end to such unpleasant experiences by keeping the variations in the purchasing power of the dollar within very narrow limits. That he somewhat underestimates the direct effect of the world war in raising the cost of living and, as I think, correspondingly overestimates

its indirect effects through its expansions of currency and credit, is a secondary matter. So also is his inclination to throw upon our unstable dollar more than its just share of blame for the existence of social discontent. What I am here concerned with is the plan itself and, as it seems to me, a fundamental error which underlies it.

Dr. Fisher recognizes the fact that, to a greater or less extent, he has been anticipated by others. The various writers who have discussed a " tabular " or " multiple " standard of value seem to have assumed that, if so constituted as to be accurately representative of goods in general, it would afford a just standard for deferred payments; and this is the assumption which underlies Dr. Fisher's plan of stabilizing the dollar. From this point of view, he has a considerable advantage over earlier writers on the subject in the fullness of the price records now available and the elaborate systems of index numbers based thereon. Yet one may be permitted to doubt whether it is possible to construct, even with all these helps, a standard which shall measure the price movements of goods in general with a very high degree of accuracy, tho Dr. Fisher compares the results at which he aims with those attainable through the yard-stick in measuring length.

" What is needed," he says, " is to standardize the dollar, just as we have already standardized the yard-stick, the pound weight, the bushel basket, the pint cup, the horse power, the volt, and, indeed, all the units of commerce except the dollar."

And his plan for accomplishing this object is to take, at a suitable time, a dollar's worth of carefully selected goods, which shall thereafter serve as a measure of value for goods in general, including gold.

" A true standard of value," he says, " should not be dependent on one commodity merely, whether that

commodity be gold or silver, or wheat or what not. Two commodities would be better than one"; and "a composite of gold, silver, copper, platinum, and all the other metals would be somewhat more stable than an amalgam of two, just as a number of tipsy men can walk more steadily arm in arm than two only, it being wholly unlikely that all the men in the line would lurch in the same direction at the same instant."

Metals, however, are not the commodities to which Dr. Fisher would assign a leading place in constructing his standard. He says:

> In order to secure a dollar constant in its purchasing power over goods in general, it should, in effect, be a composite of those very goods in general. For instance, we might imagine a composite commodity dollar consisting of 2 board feet of lumber (made up of various kinds); 1/20 of a bushel of wheat; 3/4 of a pound of steers; 1/2 of a pound of meat; 30 pounds of coal; 1/100 of a barrel of white flour; 1 pound of sugar; 1/2 of a pound of hogs; 1/3 of a pound of cotton; 1/3 of a gallon of petroleum; 1 egg; 1 pint of milk; 1 ounce of butter; 1/30 of a bushel of corn; 1/25 of a bushel of potatoes; 1/100 of a pair of shoes; 1 1/2 pounds of hay; 1 ounce of hides; 1 ounce of tobacco at the farm; 1/2 of an ounce of manufactured tobacco; 1 1/2 ounces of lard; 1/2 of an ounce of leather; 1/7 of an ounce of wool; 3/4 of a pound of steel; 1 ounce of copper; 1/10 of an ounce of rubber; 1/300 of a gallon of alcohol; 2 ounces of soap.
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> These happen to be the relative quantities of some of the three hundred commodities used by the United States Bureau of Labor Statistics in making up its index number of prices. The entire list, of which the articles specified are the more important, was actually worth one dollar in 1909.
>
> If at that time we had established such a dollar as our unit — that is, a composite dollar consisting of a big basket containing those three hundred bits of goods — that composite basketful of commodities — or "goods-dollar," let us call it — would evidently have to be worth a dollar at all times; and the cost of living — at least the cost of the representative assortment in that basket — could not rise or fall. That assortment would always cost a dollar simply because a dollar is that assortment.

Accepting the "goods-dollar," or "composite basket of goods," as a thing of stable value, Dr. Fisher would

stabilize the gold dollar by preventing its value from diverging materially from that of his proposed goods standard, and this he would do by making it heavier, if its value, as compared with that of the "goods-dollar," is found deficient or lighter if its value, when tried by the same test, is found too great.

To avoid the confusion and inconvenience of having gold dollars or gold eagles of different size and weight circulating side by side or jingling together in the same pocket, Dr. Fisher proposes that the money in actual circulation shall be of paper only. He proposes that gold certificates be used instead of gold coins, as, indeed, they already are in most cases. He says:

> If gold thus circulated only in the form of paper representatives, it would evidently be possible to vary at will the weight of the gold dollar without any such annoyance or complication as would arise from the existence of coins. The government would simply vary the quantity of gold bullion which it would exchange for a paper dollar — the quantity it would give or take at a given time. As readily as a grocer can vary the amount of sugar he will give for a dollar, the government could vary the amount of gold it would give or take for a dollar.

Passing over certain details, I quote again from Dr. Fisher's pamphlet:

> A definite and simple criterion for the required adjustments [1] is at hand — the now familiar "index number" of prices. The Bureau of Labor Statistics, which now publishes an index number, the Bureau of Standards, or other suitable government office, would be required to publish this number at certain stated intervals, say monthly. That is, each month the Bureau would calculate from current market prices how much would have to be paid for our composite basket of goods. This figure it would publish and proclaim; and this figure would then afford the needed official sanction to the Secretary of the Treasury to change the amount of gold which the mint would give or take for a gold certificate, and thus increase or diminish the purchasing power of that certificate. The certificate would always be equal to the gold dollar; and the gold dollar would be kept equal to the goods-dollar, which is the ultimate standard.

[1] The periodical changes in the weight of the gold bullion dollar.

After illustrating in some detail the small monthly changes in the weight of the dollar that would, as he anticipates, follow the adoption of the goods standard during a period of rising prices, Dr. Fisher says:

> And, so, as long as the index number persists in staying even a little above par, the dollar will continue to be loaded each month until, if necessary, it weighs an ounce, or a ton for that matter.

It will be seen from Dr. Fisher's frank recognition of the extent to which the dollar might be weighted in case of necessity that hardly any conceivable increase in the supply of gold, either from the discovery of new sources or from improved methods of extracting the metal, could cheapen it too rapidly to permit the weight of the dollar to be increased with equal speed. Dr. Fisher's plan would, in fact, open an unlimited market for the produce of the gold mines of the world, and the incentive to their rapid exhaustion which it would thus offer is enough to make the hair of a conservationist stand on end. For this, however, the plan makes some atonement, and we must accompany Dr. Fisher a little further in his account of its operation. He says:

> Or, suppose the index number falls below par, say 1 per cent below. This fact will indicate that the purchasing power of one dollar has gone up. Accordingly, the gold dollar will be reduced in weight 1 per cent, and each month that the index number remains below par the now too heavy dollar will be unloaded and the purchasing power of the certificate brought down to par. Thus by ballast thrown overboard or taken on, our index number is kept from wandering far from the proper level — that is, from the price of one dollar per composite basket of goods. In short, the adjustment, like all human adjustments, takes place " by trial and error." There is always a slight deviation, but this is always in process of being corrected. . . .
>
> All dollars, bank notes, etc., yellowbacks, and gold bullion would be absolutely equivalent to one another and would be approximately equivalent to the composite or goods-dollar. We would then be substantially rid of a fluctuating price level with its long train of

bad consequences. The monetary yardstick would at last be standardized.

It may seem a long look ahead to think of a period following the exhaustion of the world's gold mines, but a period of greatly diminished production of gold may possibly be much nearer than we imagine; and it must be placed to the credit of Dr. Fisher's plan that its provision for progressive reductions in the weight of the dollar (or other monetary unit) would, in principle, be adequate to almost any exigency that could possibly arise as a result of long continued diminishing supplies of gold. For just as the weight of a gold dollar would, if necessary, be increased to " an ounce or for that matter a ton," so its weight could be diminished to any conceivable extent. Even if gold became more precious than radium now is, the allowance of gold bullion per dollar could be made sufficiently minute to meet the requirements of the situation; for, as coins are not to be struck or circulated, no difficulty would arise through a dollar's becoming too small for convenient handling, or even so small as to be visible only through a microscope. But the same principle which permits an indefinite reduction in the weight of the gold (bullion) dollar would, of course, permit the substitution of silver or even a baser metal to an equal value, if that should on the whole be the more expedient. It would only be imperative that any such change be made with the faithful intent and actual effect of keeping the dollar at par.

But this brings us face to face with the fundamentally important question whether the par proposed by Dr. Fisher is a safe and satisfactory one, and this must now be considered.

Would a Goods Standard be Stable?

We all know that in a progressive condition of industry, such as now exists, the value of goods, as measured, for example, by the average amount of labor required for their production, is constantly and quite rapidly changing. So, too, is the value of either goods or labor, if measured by its true determinant, namely, the estimate placed upon it by human beings.

Dr. Fisher's plan of stabilizing the dollar, if perfectly realized in practice, would guarantee to a lender a quantity of goods equal to that represented by his loan when made. Let us suppose twenty-five years to elapse before the debt is paid. In the meantime there have been great improvements in machinery and industrial processes, and a great increase has taken place in the extent to which such improvements are used. There has consequently been a great increase in the average productivity of human labor. For convenience, we may suppose that it has doubled, and that the debtor in the case under consideration is able to produce or procure as large a quantity of goods as his loan represented when received with half the labor which it would then have cost him. Is it fair that he should get off so lightly?

Let us first consider a case in which this question must be answered affirmatively. Let us suppose that the increasing productivity of labor is steadily accompanied by an ever-growing eagerness for educational opportunities, not only among the young, but throughout the community. This will necessarily carry with it a corresponding eagerness for reduced hours of labor; and we may, in fact, suppose that the entire advantage arising from the increased productivity of labor is taken

in that form [1] and in the increased leisure thus made available for educational uses. We may further suppose that, aside from certain beneficial changes in their distribution, there is no alteration in regard to goods, or, at least, no change in the average consumption per capita, people in general caring little for luxury or display and finding their satisfaction in "plain living and high thinking."

Under such conditions our supposititious creditor need only receive the quantity of goods represented by his loan when it was made. With that quantity he will be able to maintain his social status and meet all the requirements of his time and circumstances as completely as he could have done with the same quantity twenty-five years before. And, altho by our hypothesis his debtor can now produce or procure that quantity with half the labor which it would then have cost him, his performance of that half now involves as large a sacrifice as would have been involved twenty-five years ago in performing the whole. In doing that then, he would only have been doing what all his fellow citizens were then doing. In doing it now he would be depriving himself of educational opportunities which by our hypothesis all his fellow citizens are now enjoying, and during the entire time occupied in earning the means to pay his debt he would be falling behind them in the intellectual race, making himself a helot, and undergoing a positive social degradation. In short, under all the supposed conditions, the creditor in receiving goods equal to those represented by his loan when made would receive a degree of satisfaction equal to that so represented, and

[1] It will be seen further on that this supposition does not go far beyond what has been seriously proposed for Great Britain by a great employer of labor, who, with a view to getting a largely increased use out of machinery, suggests a six-hour day for men and women and, through six-hour shifts of human labor, a twelve, eighteen or twenty four-hour day for the machines.

the debtor in performing a diminished amount of labor would make as great a sacrifice as the larger amount involved at the earlier date. It may, therefore, be conceded that under such conditions the goods standard proposed by Dr. Fisher would be a just standard for deferred payments.

But suppose that the increasing productivity of labor is accompanied by just as rapid an expansion in the demand for goods, so that in one form or another the average consumption of goods increases just as fast as does the ability to produce them — a supposition that will not seem extravagant, if we remember that "use," as of implements, vehicles, buildings, etc., "is slow consumption," and think of the wide margin there is for expansion in the single form of roomier, prettier, and more sanitary dwellings for the poor, to say nothing of the many other lines along which expansion might advantageously take place. Let us suppose, then, that the desire for goods — including such goods as ships, flying machines, buildings, etc. — has on the whole increased just as fast as the productivity of labor; that to satisfy this desire it is necessary to work just as hard as if no industrial progress had been made, and that the general feeling of the people towards goods on the one side and labor on the other, is such that they voluntarily choose so to do. In that case justice as between the debtor and his creditor will require that settlement be made upon a labor basis. Under such conditions the creditor may justly claim that the quantity of goods represented by his loan when made no longer corresponds to the extent of the desire for goods, or to the increased need of them created by the change in social usages and standards. To get a degree of satisfaction equal to that represented by his loan when made, he must, in fact, under the changed conditions supposed,

receive twice the quantity then so represented, or else its equivalent in goods of better quality. Nor can the debtor justly complain, under the supposed circumstances, at having to perform, in order to get this increased quantity of goods, as much labor as was represented by the loan when received; for, altho by our hypothesis labor has become more effective in producing goods, it has, in this respect, merely kept pace with the increasing quantities required by a more and more exacting social standard. Moreover, in performing the amount of labor represented by the loan when made the debtor is subjected to no adverse discrimination; for by our hypothesis he and his fellow citizens generally are of their own choice working just as hard as it was customary to work twenty-five years ago. In short, under all the supposed circumstances, the creditor receives only the degree of satisfaction and the debtor makes only the amount of sacrifice originally represented by the loan. In this case, therefore, the goods standard proposed by Dr. Fisher would fall short by one-half of satisfying the requirements of justice and as a standard for deferred payments would be a signal failure.

In a stationary condition of industry a goods standard and a labor standard might coincide and both might coincide with a just standard of value.

Our suppositions in reference to a progressive condition might have been pushed further than they were; for conditions are conceivable under which a creditor might justly expect an increase in the quantity of goods returned to him more than proportional to the increase in the productivity of labor, or, on the other hand, under which a debtor might with equal justice expect to meet his obligation with an amount of labor diminished more than proportionally to the increase in its produc-

tivity. But the suppositions actually made went in each direction somewhat beyond the bounds of probability; for in practical experience [1] "it is reasonably sure to happen that as the productivity of labor increases, a part of the advantage resulting from its increase will be taken in the form of increased consumption of goods, while another part is taken in the form of increased leisure. And when the course of human feeling with reference to goods on the one hand and labor on the other is of this character," a just standard of value would give the creditor a somewhat increased amount of goods and exact from the debtor a somewhat diminished amount of labor. "In ordinary experience it probably would not be far from the mark if our standard were of such a character as to divide the results of industrial progress about equally between the debtor and the creditor; but from the point of view of economic theory there is no assurance that this would be the case. All would depend on the course of human feeling in the premises.

"Theoretical completeness would require us to consider a condition of industrial retrogression, and such a condition might be treated in much the same manner in which we have already treated the condition of industrial progress that corresponds to our actual experience at the present day"; but it is sufficient for our present purpose to point out that, wide as are the limits within which suppositions may reasonably be made as to the course of human feeling in regard to goods and labor, only in one out of the indefinite number of cases lying between the two extremes would a goods standard be a just one, and that this single case lies,

[1] The quotations which follow are from a paper entitled "Tests of Stability in the Value of Money," which the writer of this article presented in 1894 before Section I of the American Association for the Advancement of Science. See Proceedings of the Association for that year.

as already remarked, somewhat beyond the bounds of probability.

The changing relation between labor and goods inherent in a progressive condition of industry is noticed in the Report of the Monetary Commission published in 1898. On page 94 we read:

"Exactly as the world has been able to increase its efficiency in production and in obtaining satisfaction for mankind at less effort, the same labor and sacrifice has given forth a larger result." And the bearing of this circumstance on the proposal to adopt a multiple (goods) standard is recognized in the following passage from page 107:

> The theory of justice in the Multiple Standard is based on the assumption that the creditor should have only the same quantity and quality of goods at the end as at the beginning of the contract; but if, during the continuance of the contract, advances in the arts have enabled society to produce these goods at less cost, it cannot be contended that this result has been due to the individual exertions of either the creditor or the debtor.

The word "cost," as used in this extract, might, of course, mean cost in money, but the context shows that the fact of a diminished cost in labor had a prominent place in the writer's mind. He does not carry his analysis so far as to indicate the conditions under which a creditor might, or might not, fairly expect more goods than his loan represented when made, but he plainly sees that the changing relation between goods and labor is a fact which demands consideration before a "composite basket of goods" — to use Dr. Fisher's phrase — can safely be adopted as our fundamental unit of value.

The special claim made on behalf of the tabular, or multiple, standard is that it is a just standard of value for deferred payments; but it clearly is *not* a standard of stable value, for the "composite basket of goods," or "goods dollar," which Dr. Fisher proposes to adopt as

" the ultimate standard " is itself a thing whose value is constantly changing. It is not merely that the separate items of goods whereof it is composed are continually changing in their value relations to one another, but that the " goods dollar " taken as a whole is a thing whose value changes with changing circumstances. It is, therefore, a dollar that will fail to do the special thing for which it is chiefly recommended, namely, to afford a trustworthy standard for deferred payments. And this is true, even tho the price records may have been faultlessly kept, the relative importance of the commodities included in the " composite basket of goods " justly estimated, and all the required computations correctly performed. To do even these three things with the success necessary to make the " composite basket of goods " as accurate a measure as the yardstick is of length is more than could be seriously expected; but, in order to provide a just standard for deferred payments, it would be necessary to do much more. To do successfully the three things just named would merely be to provide the means of determining with some approach to accuracy the changes in the value of gold as compared with goods in general; and, after allowing all we can for the superior steadiness of a row of tipsy men as compared with one tipsy man — or, say, 300 kinds of goods as compared with any one kind — we cannot feel a very firm assurance that the approach would necessarily be a close one.[1] But, besides ascertaining as closely as we can these changes in the value of gold as compared with goods in general, we have also to take into account the changes in the cost of goods as measured in labor and the changes in human feeling and usage in regard to both labor and goods. Hence the

[1] As bearing upon this point an essay by J. Shield Nicholson on " The Measurement of Variations in the Value of the Monetary Standard," which is included in his work on Money and Monetary Problems, may be read with advantage.

problem of determining what periodical changes of weight a gold-bullion dollar would require in order to become a just standard for deferred payments is very much less simple than Dr. Fisher's plan assumes; and it is greatly to be feared that if we undertook to make such changes, our work would be sadly lacking in that accuracy which, according to Dr. Fisher's own contention, modern business imperiously demands — so badly lacking, in fact, that, instead of a dollar stabilized as to value, we should have a dollar of which neither the value nor the weight would be known to any one for more than a few weeks in advance. It is doubtful whether a dollar so lacking in definiteness could be made the basis of contracts enforceable at law.

As Jevons aptly says: "Value is the most invisible and impalpable of ghosts, and comes and goes unthought of while the visible and dense matter remains as it was."[1] Yet it is precisely this evanescent thing called value in respect to which the dollar must be stabilized, in order to make it a just standard for deferred payments; and that cannot be accomplished by stabilizing its relation to another unstable thing.

Dr. Fisher, of course, assumes that his proposed assortment, or "composite basket," of goods is not unstable in its value, or that it is, at least, so much less so than gold as to justify the fundamental change in our monetary system which would be involved in adopting that assortment as our ultimate unit of value. When the bare minimum of goods necessary to subsistence was about all that the mass of men could hope for, a "basket of goods" selected with reference to their certain and imperative needs might possibly have had a considerable stability of value;[2] but in our time there is a wide

[1] Investigations in Currency and Finance, p. 80.

[2] It would probably have been subject to rather serious fluctuations from year to year, tho comparatively stable on an average for long periods.

margin for choice between goods of many kinds, between tangible goods like coal or bread and intangible goods like a moving picture show or a concert, and, in general, between goods and leisure, or, say, between goods and the mental attainments for which leisure would provide opportunity.

And think of the tremendous change in the relation between goods and labor that would be involved in the execution of such a plan as Lord Leverhulme — a practical business man and large employer — has seriously proposed for Great Britain. In view of the vast financial obligations incurred in the prosecution of the war, he declares it to be necessary that the machinery available for industrial uses shall be far more fully employed than it has been in the past. "We must have," he says, "a six-hour working day for men and women, and by means of six-hour shifts" of human labor "we must work our machinery 12, 18 or 24 hours per day." Think, too, of the still greater change that would attend the adoption of a similar plan in the United States, where machinery is far more extensively used than in Great Britain. There probably has never been a time in the history of the world when a goods standard of value would have had so little definiteness or stability as it would have today — never a time when the kinds of goods to be chiefly in demand were so subject to great and unforeseeable changes.

Under present conditions a contract to give or receive a certain number of dollars is a contract to give or receive a perfectly definite *quantity* of gold or its legal equivalent; and, tho its value is confessedly subject to change, it is comparatively free from sudden and violent fluctuations. "The precious metals," says Walker, "have a high degree of steadiness in value from season to season and from year to year, far exceeding in this

respect any other considerable class of substances." The existing stock of them is so large that the supply of them is comparatively independent of the output for any one year, or even a number of years; and, imperfect as our gold dollar undoubtedly is as a measure of value through any considerable period, it will probably be far safer to retain it and strive to remedy its defects than to abandon it in favor of any assortment of goods which could now be selected as its substitute.

Can Present Monetary Units be Stabilized?

Since the value of money, like that of other things, is subject to the law of supply and demand, the way towards a stabilization of that value apparently lies through a careful observation and study of all the facts and circumstances by which changes in the value of the monetary unit are indicated, with a view to such an adjustment of supply to demand as may keep those changes within the narrowest limits possible. This would, of course, be no easy task, but if the effort were for a time attended by scant success, we should at least have our dollar of definite weight and fineness with which to do business while striving for better results. The data required as a guide to our efforts along this line would be much the same as those which would really be necessary to secure any approach to success along the line proposed by Dr. Fisher; for, as already pointed out, price lists alone, with the index numbers computed therefrom, would fall far short of supplying all the criteria indispensable to the success of an attempt to stabilize the value of the dollar by periodical changes in its weight.

The regulation or control of the issue of paper currency is already pretty generally recognized as a proper

function of governments; and, great as the errors of governments have been in the issue of inconvertible paper money, there are conspicuous instances of prudent and successful management continued through long periods, if not directly by governments themselves, by institutions acting as their agents under strict legislative control; such, for example, as the Bank of England.[1] Should success attend the effort to assure durable peace through a league of nations, the chief cause of excessive governmental issues of paper money would be removed; for that has most frequently been the subordination of sound currency principles to fiscal needs under stress of the exigencies of war. And, even if wars should still occur, a resort by any belligerent to the issue of inconvertible paper might be treated by the League as a justifying cause for intervention against the offending nation, on the ground that the adoption of such a means of meeting war expenses was analogous to a blow beneath the belt in the prize ring.

The regulation of the supply of gold and silver — for there still are countries in which silver is the chief money — might present more formidable difficulties. But granting the existence of criteria whereby to judge approximately whether the supply is excessive or deficient, increased or diminished taxation would afford a means of repressing or stimulating activity in the production of either or both of the precious metals. In the case of mines owned by governments, increased or diminished royalties would serve the same purpose. In cases, should there be such, in which the mining of gold or silver

[1] Through many decades prior to the world war the Bank of England, by raising its rate of discount whenever its gold reserve was threatened with undue depletion, not only kept its notes at par with coin and its bullion equivalent, but in doing so prevented an undue expansion of credit, influenced in an effective degree the course of prices within the kingdom, encouraged the exportation and discouraged the importation of merchandise, and protected the country against a too serious adverse balance in its foreign trade. See an interesting statement on this subject in the First Interim Report of the (British) Committee on Currency and Foreign Exchanges after the war.

is operated by a government, a league of nations might properly suggest diminished or increased activity, as either might be rendered desirable by the circumstances of the time. The supply of the precious metals at just the rate to assure as far as possible their continuous equability of value is essentially a world problem, and the formation of an effective league of nations, if successfully accomplished, should contribute greatly towards as good a solution of it as is at all practicable.[1] This, at least, is a line along which either separate nations or a league of nations can experiment for a century, learning from experience as time goes on and running little, if any, risk of producing in the meanwhile such industrial, commercial and financial chaos as would result from the failure of a plan like Dr. Fisher's. If incidentally to the effort to regulate the supply of gold and silver the earth's latent stores of these metals should be made to contribute generously to the revenues of some of the debt-burdened governments and thereby lighten the burden of general taxation, the result would be welcome in full proportion to its magnitude, whether that should prove small or great.

In connection with what has been said of increasing or diminishing taxation and royalties as a means of retarding or accelerating the production of gold or silver, mention may here be made of the proposal to subsidize gold mining which is now seriously put forward in certain quarters on the ground that the needed quantity of gold cannot otherwise be profitably produced under present industrial conditions. At bottom this seems to be virtually a proposal to lessen the gap between gold and depreciated paper money by making gold more plentiful and, therefore, cheaper. Rather than resort to

[1] Whether a league amounting practically to a world state could yet be safely constituted is, however, much too large a question to be decided hastily.

so expensive a remedy for currency depreciation, the nations in which such depreciation exists should let it remain if necessary for an indefinite period, adopting, however, the promptest and most effective measures to prevent it from proceeding any farther. The world has surely had inflation enough for the present without increasing the evil by adding inflation in gold to inflation in paper.

How Would Dr. Fisher's Plan Affect the Public Debt?

In regard to the gold obligations of the government, the effect of the adoption of Dr. Fisher's plan would, of course, depend altogether on the course of prices. Should these continue to rise by a small percentage every month or two, involving the necessity of corresponding increments in the weight of the gold dollar, these gold obligations would, of course, be materially increased. But it is, perhaps, quite as likely that the return of peace may usher in a period of falling prices, in which case successive diminutions in the weight of the dollar would have the opposite effect. In any case, a goods standard would bring to the government any advantages that may accrue from improved industrial methods, processes and appliances, whereby the labor cost of commodities may be reduced.

But the concern of the government will, of course, be with the strict observance of its contracts and the maintenance of its credit, and its policy will presumably be dictated by a desire to do as nearly as possible what exact justice requires, keeping a straight course between its creditors and the taxpayers and showing no unfairness to either at the expense of the other. On the whole, however, the fact that its great loans have been

floated on the basis of a dollar of 25.8 grains of standard gold will have great weight as an argument against making any change whatever in the weight or fineness of that dollar. Moreover, any such change might seriously endanger the success of any loans which may hereafter have to be negotiated.

EDWARD T. PETERS.

GOVERNMENT CONTROL OF SUGAR DURING THE WAR

SUMMARY

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I. Introduction

There is hardly any aspect of government control during the war which offers so rich a field for economic analysis and study as the control of the entire sugar industry by the United States Food Administration. Initiated with modest appeals to the public by Mr. Herbert Hoover in June, 1917, for voluntary reduction in the household consumption of sugar and with a voluntary agreement with the beet sugar producers in the latter part of August, 1917, a continuous development took place, culminating ultimately in complete government control of the entire sugar trade from the points of production to the points of ultimate distribution.

The activities of the Food Administration in so far as they relate to sugar fall into four well defined periods. The first period marks the transition of the sugar industry from a peace basis to a war basis, covering in point of time the second half of the year 1917. The Food Control Act which was the legal basis for all

the activities of the Food Administration, was enacted in this period, and the Sugar Division of the Food Administration under the able executive direction of Mr. George M. Rolph, took form at this juncture as a constituent entity in the organization of the Food Administration. During this period voluntary agreements with the different sugar producers, relative to both prices and distribution of the 1917–18 crop, formed the basis of control over the industry.

The second period runs from January to about May, 1918, during which time the machinery created in the first period of governmental control, to handle the problems of the 1917–18 crop, functioned automatically with practically no amendment.

The third period, probably of greatest interest to the economist, covers the interval between May, 1918 and the signing of the armistice, in which period plans were formulated for the handling of the more difficult problems relative to price and distribution involved in the 1918–19 crop. This period witnessed the creation of a sugar corporation, the United States Sugar Equalization Board, Incorporated, the $5,000,000 of capital stock of which was subscribed for by the President of the United States out of his emergency funds, the purposes of this corporation, being, "to equalize the cost of various sugars and to secure the better distribution." [1]

The fourth period begins with the signing of the armistice. The abrupt termination of the war found the United States Sugar Equalization Board bound by several contracts, for the execution of which a continuance of the corporation was essential. Up to the date of writing, the activities of the corporation for this fourth period have been mainly of a routine nature and no important economic problems have developed, altho

[1] News Release of Food Administration, July 11, 1918, No. 1061.

it is of interest, to note the effect of governmental control upon an industry during a period of post-war reconstruction.

Since the first period has already been discussed at some length in a previous number of this journal,[1] and has been, in addition, the subject of a senatorial investigation, it will be unnecessary to treat it here. The second period covering simply the automatic functioning of the machinery created in the first period needs little discussion and the fourth period, not being a complete episode as yet, can be treated more profitably at a later date. In this paper an account will therefore be given of the third period which is indeed the most significant period.

II. The Problems Relating to Sugar in Connection with the Crops of 1918–19

(a) *Problems Relating to Price*

The third period of government control of sugar in the United States, as the following pages demonstrate, witnessed the realization of Mr. Hoover's original plan for dealing with this commodity. Speaking before the Senate Committee on Agriculture on June 19, 1917, Mr. Hoover had stated his plan [2] as follows:

> There is one other commodity which I may refer to in this matter of purchase and sale, and that is sugar. At the present moment our sugar refiners are competing with the allied sugar commission for the purchase of Cuban sugar. It must be patent that if we create a sugar commission and if that sugar commission coöperates with the Allies and the Cuban producers to take over the Cuban crop at the fixed price, that we can effect a considerable saving on the present inflated price of raw sugar, and we can stabilize the price of sugar throughout the whole of next year, because the sugar commission should be able to impose upon the refiners the necessity to pass the savings made on raw sugar through to the consumers. As there

[1] See article by Roy C. Blakey, "Sugar Prices and Distribution under Food Control," Quarterly Journal of Economics, August, 1918, pp. 567–596.

[2] From Food Administration Bulletin, No. 1, 1917.

would be a dominating amount of imported raw sugar it should be possible to maintain a stable price throughout the next year; there would thus be no incentive to speculation, and the saving to the public on its sugar should reasonably amount to 20 to 25 per cent.

There can be no loss in such an operation, because one-half of the American sugar supply would be in the hands of the Sugar Commission, and the Sugar Commission should be able to make a price to cover the whole of its outlay. In this matter, like that of wheat, we require a certain margin of cash with which to provide for bank credits. So far as I can see now there are only three or four commodities where we are likely to enter actively into the purchase and sale. In the case of wheat and sugar we have taken the opinion of the producer, of the manufacturer, and of the distributor as to the effectiveness of such operation in reducing prices to the consumer, and I feel confident that there is general agreement and entire safety and usefulness and necessity in this course. We should take similar advice before entering upon any other commodity.

But the Food Control Act, when it was enacted, did not give the Food Administration the authority to fix sugar prices directly or to make purchases of sugar as had been done abroad so that it was necessary to depend on the voluntary coöperation of the various branches of the sugar trade. Through such voluntary coöperation, the various agreements, with the domestic beet sugar producers, with the Louisiana cane sugar producers, and the cane sugar refiners were effected as well as the purchase of the entire 1917–18 Cuban crop for account of the United States and the British Royal Commission on the Sugar Supply.

Early in 1918 it became apparent that the problems relating to sugar could no longer be effectively solved through these separate voluntary agreements with the different branches of the trade and through the existing executive machinery of the Food Administration. For there were two sets of problems facing the Food Administration in 1918, the first concerned with the proper prices for the 1918–19 crops, in the various sources of supply, the second concerned with supply and distribu-

tion. In its attempt to solve these problems, the Food Administration was ultimately forced to create a commission of the sort Mr. Hoover had described before the Senate Committee on Agriculture in June, 1917. A careful examination of the problems which led to this result is essential for a clear understanding of the whole matter. These problems are set forth in the first part of this paper, and the second part is devoted to an exposition of the manner in which these problems were solved.

The difficulties of the Food Administration in regard to the price of sugar for the 1918–19 crop emerged from its accepted policy of encouraging domestic sugar production. For early in the history of the Food Administration there was definite acknowledgment of the fact that an encouragement of domestic sugar production was highly desirable mainly because of the necessity for conservation of import tonnage but also in view of the gradual reduction in the world's supply. It was hardly to be expected that war conditions with the consequent reduction of the labor supply, the high prices paid for competing crops, and the high cost of materials would allow much increase in the domestic sugar production but it was essential to take measures to maintain, at least, the normal production.

In anticipation of a possible reduction in the sugar beet acreage for the campaign of 1918–19, owing to the competition of more lucrative crops and high costs of labor and materials, Mr. Hoover sent the following circular letter to all sugar beet farmers, dated October 22, 1917:

> One of the most vital problems confronting the nation is that of procuring sufficient sugar to meet the requirements of our people and of the Allied Nations fighting our common battle. The production of cane sugar in this hemisphere can and will be increased to a limited

degree. But we must rely upon the farmers in sugar beet producing sections of the country for a part of the needed supply. I, therefore, earnestly appeal to every farmer, so situated, to come to his country's aid in this hour of need. Without the co-operation of the American beet grower our task will be very difficult and our ability to respond to the calls to be made upon us for this very essential commodity will be curtailed. It is at least the duty of every beet grower to maintain in 1918 his normal acreage of sugar beets. It is his privilege to increase the acreage to the extent that a well balanced production of crops will permit, and in this manner effectively demonstrate his patriotism. — HERBERT HOOVER.

It developed, however, that the beet farmers in the West were refusing to sign the customary contracts for acreage with the beet sugar companies because they felt themselves unjustly treated with regard to prices. Moreover, their costs of production were mounting rapidly, competing crops were becoming more profitable, and there was a feeling that with a price restricted by agreement between the sugar factories and the government, the raising of beets would become progressively less profitable in comparison with the production of other food commodities, the prices for which were not regulated by the government. Mr. Hoover thereupon appointed local commissions in the principal beet-growing states to investigate costs of production and he further urged the beet sugar companies to abide by the decisions of these commissions, promising these companies that if they would do so, the government in turn would undertake, in so far as it was able, to readjust prices for the sugar made from these higher cost beets so as to cover the increased outlay involved.

These commissions summoned witnesses and conducted exhaustive examinations in the various states, later submitting reports to Mr. Hoover. The stenographic reports [1] of the California hearings alone con-

[1] These original reports are in the files of the Food Administration. Abstracts of the California and Colorado reports were prepared and issued in the form of mimeographed bulletins.

sisted of nine thick volumes of typewritten matter, the testimony of nearly one hundred growers of sugar beets from the various sections of California having been embodied. In this state, the hearings began at Los Angeles, California, on February 5, 1918, and ended at Stockton on February 21, 1918. This commission suggested to Mr. Hoover [1] " that the price for sugar beets, should be on a basis of $8.25 per ton for fifteen per cent beets, the price to increase or decrease one-fifteenth for each one per cent the sugar content increased or decreased, and the price also to increase or decrease a dollar a ton for each cent the price of sugar increased or decreased above or below seven and one-half cents per pound."

The Colorado Commission began its investigations at Longmont, February 13, 1918 and reported to Mr. Hoover on March 6, 1918. The following extract from the report gives the general conclusions of the Commission:

> Your Commission recommends as a final price recommendation, a minimum of $9.00 per ton on a sliding scale basis which will offer $9.00 per ton for sugar beets testing over 12 and under 14 per cent, and which advances the price at the proportionate value of sugar at the minimum price when the analysis shows a percentage of sugar above this fixed minimum at the rate of 64 cents for each one per cent or 32 cents for each one-half per cent above that minimum, and which shall decrease the price at the same rate below that fixed minimum where the analysis runs under 12 per cent.

[1] From the Report of the Federal Sugar Beet Commission of California to Mr. Hoover, p. 8. This report contains much valuable information. The principal points of interest brought out in the testimony are as follows:

1. The sugar beet crop requires considerably more labor, care and attention than most other annual crops.

2. A large portion of the labor, particularly the thinning and topping of the beets, cannot be done by the farmer or his family even on small acreages.

3. Soils of varying grades of fertility are utilized for beet culture but in some regions the poorer lands are utilized and these lands are benefited thereby.

4. In 1917 the total average working cost per acre in California including repairs and depreciation on equipment, amounted to $50.80. Interest, taxes, supervision, etc., averaged about $33.00 per acre, so that the total cost was about $84.00 per acre. In Colorado the average cost was about $92.00 per acre.

5. A large portion of the land generally utilized for beet growing in California is also devoted to growing beans. In 1917 large profits were made by the producers of beans altho the growing of beans involved much less care and risk than the growing of beets.

We do not consider a flat rate equitable, altho farmers generally favor the flat rate. If your Administration decides, however, that a flat rate would meet the extraordinary circumstances better than an equitable sliding scale, we recommend $10.00 as the figure to control that flat rate.

The Nebraska Commission was appointed March 5, 1918 and reported to Mr. Hoover on April 6, 1918 as follows:

The cost of producing sugar beets has increased very rapidly, but the price paid for beets has increased less than has the price paid for hay and cereals. To meet this high cost and stimulate beet production, your Commission recommends that the growers be paid $10.00 per ton at the dump for beets, except in those areas located at some distance from the factory where the cost of production was shown to be lower than the average cost, where we recommend a price not less than $9.50 per ton.

The beet sugar factories agreed to abide by the decisions of these commissions and there is definite evidence that they carried out their promises. The Department of Agriculture reports the following average prices paid farmers for beets in 1918 in the various states as compared with other years:

AVERAGE PRICE PAID FOR BEETS PER TON[1]

State	1918	1917	1916
California	$9.95	$7.60	$6.30
Colorado	10.02	7.28	6.06
Idaho	10.00	7.06	6.16
Michigan	10.08	8.04	6.14
Nebraska	9.96	7.22	..
Ohio	10.03	7.18	6.83
Utah	10.01	7.04	5.73
Wisconsin	10.00	8.81	..
Others	9.86	7.28	6.18
United States	10.00	7.39	6.12

The percentage of increase for the United States as a whole, in the price paid the farmers for beets in 1918, as compared with 1917, was thus 35.3 per cent. This increase in the price of beets was of course reflected in

[1] From Crop Reporter, April, 1919, p. 38 and April, 1918, p. 41.

higher costs for the beet sugar factories and the outlay for beets represented 58.2 per cent of the total cost of sugar production in the years 1919 through 1914. Moreover, the cost of all other materials used in sugar production and the wages of labor had also increased rapidly.

The Tariff Commission coöperated actively with the Food Administration in seeking to determine as far as possible the actual increase in costs. The results of the investigations carried on at that time have been incorporated in part in a bulletin published recently by the Tariff Commission. In this bulletin the Commission made the following pertinent comment relative to increasing costs: [1]

> There has been a substantial advance in the prices of all the principal items entering into the production of sugar. Prices were higher for the season 1917–18 than before the war and higher for the season 1918–19 than for 1917–18. The greatest percentage advance is shown in textiles, 231 per cent for bags and 256 per cent for filter cloth. Such high percentage advances, however, add less to the cost of sugar than items such as labor, which show a lower percentage advance but are relatively more important. A rise of 200 per cent in filter cloth would add about $1.30 to the cost of a ton of sugar in 1918–19 above the cost of 1917–18, while an increase of only 40 per cent in the wages of factory labor alone would add over $3 and if the rise extended to agricultural labor, as manifested by the increased cost of beets, the increased cost of a ton of sugar would be over $12.[2]

[1] Costs of Production in the Sugar Industry, Tariff Information Series, No. 9, p. 31.

[2] On p. 31 of the pamphlet referred to above a table is presented showing percentage rates of increase for wages and prices of sundry items used in sugar production. These figures, however, represent averages for ten firms only. The following figures compiled by the Statistical Division of the Food Administration show the average percentages of increase in the various items of cost for all the firms reporting each item:

Item reported	Number of firms reporting	Average per cent of increase, 1917 over 1916	Average per cent of increase, 1918 over 1917
Beets	42	22.4	34.0
Labor	48	12.9	22.6
Transportation	20	.3	52.9
Coal	34	61.5	13.4
Coke	18	57.6	18.1
Lime or limerock	40	8.4	15.4
Bags	42	21.1	147.4
Barrels	15	12.2	71.4
Filter cloth	13	31.3	184.1

On the basis of the data submitted by the producers to the Tariff Commission and the Food Administration it was possible to compute the probable cost of producing a ton of sugar for the campaign of 1918–19 [1] for each producer and it was possible to prepare cost line curves showing the relative importance in sugar production of the low and high cost producers.

Such analysis revealed the following situation:

1. A price of 11½ cents per pound for seaboard refined sugar would have been essential to cover all producers and yield a profit of a cent a pound to the high cost producers.

2. Nine cents a pound would have been essential to cover approximately 85 per cent of the production and yield a profit of a cent a pound to the high cost producers of the group.

3. The preceding year's price, 7.45 cents a pound, would have covered but 30 per cent of the production yielding a profit of 1 cent per pound to the high cost producer.

It was therefore necessary that a price of at least 9 cents a pound for refined sugar be agreed upon if the

[1] The following table (p. 32 of Tariff Information Series, No. 9, Costs of Production in the Sugar Industry) shows the manner in which this computation was made.

Items	Cost per ton of sugar 1917–18 averages by		Percentage increase price, rate, or wage, 1918–19 over 1917–18	Estimated cost per ton of sugar in 1918–19 averages by	
	factories	tonnage		factories	tonnage
Beets	$80.04	$67.81	34.0	$107.25	$90.86
Factory labor	12.04	7.86	22.6	14.76	9.64
Coal	7.60	5.05	13.4	8.62	5.73
Coke	1.02	.68	18.1	1.20	.80
Lime or limerock	1.97	1.73	15.4	2.27	2.00
Bags	2.24	2.11	138.7	5.35	5.04
Barrels	1.37	1.28	76.4	2.42	2.26
Filter cloth	.64	.64	184.1	1.82	1.82
Other supplies	3.95	2.89	16.2	4.59	3.36
General expenses	1.22	1.22	31.4	1.60	1.60
Transportation	4.73	6.39	52.9	7.23	9.77
Total	116.82	97.66	....	157.11	132.86

The figures in the above table show the tremendous increase which was anticipated in the cost of sugar production for the campaign of 1918–19 over the previous campaign.

beet sugar production was to be maintained. Even at that relatively high price it was clear that many factories would face a loss, but, on the other hand, it was to be reasonably expected that a decreased production from this source would be counterbalanced by the increased production of the lower cost firms owing to the stimulation of a profitable price.

The domestic cane sugar producers of Louisiana were in much the same situation. Figures submitted to the Tariff Commission and the Food Administration by the Louisiana producers showed the following situation there:[1]

Cost — cents per pound (Value of molasses deducted)	Per cent of total production of sugar produced under each cost	
	Campaign of 1917–18	Anticipated for 1918–19
5 cents	11.7	2.1
5½ "	14.1	2.3
6 "	34.6	17.8
6½ "	61.2	27.3
7 "	86.4	33.9
7½ "	95.8	47.8
8 "	96.4	53.8
8½ "	98.3	74.9
9 "	99.4	91.1
9½ "	99.4	95.2

While the above figures show the cost of sugar production to be rather high for Louisiana, it must be remembered that the greatest part of the sugar produced in that part of the country is suitable for direct consumption and commands a price almost equal to that of the refiners' standard grade of granulated sugar. The cost figures above, therefore, are more comparable with the beet sugar producers' costs, rather than with the Hawaiian or Cuban cane producers' figures.

It was therefore clear from the figures submitted that a large proportion of the Louisiana sugar industry could

[1] These figures were compiled by the writer from two sets of schedules submitted by the Louisiana producers, one set having been submitted to the Tariff Commission, the other set to the Statistical Division of the Food Administration.

not be maintained on a price basis of less than 10 cents per pound for refined sugar.[1]

Investigation made by the Tariff Commission of the Hawaiian cost situation revealed a situation generally similar to the situation obtaining in the continental United States.

In contrast, however, with these high costs in the domestic industry was the condition in Cuba. Here too costs were mounting but they were not as high in the United States. The mission from the Republic of Cuba appointed by President Menocal to negotiate a price for the 1918–19 crop, submitted a brief to the Food Administration relative to the costs of production and the price for the 1918–19 crop, in which it was stated that the average cost per pound of sugar in 1916–17 for firms representing a production of 946,146 short tons or 31.28 per cent of the total crop of that year was 3.355 cents, whereas in 1917–18, the cost per pound for firms representing a production of 1,037,318 short tons or 30.1 per cent of the total crop had mounted to 3.88 cents, an increase of .525 cents per pound. The Mission stated that a price of 5.60 cents f. o. b. at the north ports of Cuba and 5.55 cents f. o. b. at the south ports would be required to sustain and to stimulate the production of sugar for the 1918–19 crop, as compared with the 4.60 cents at the north ports of Cuba and 4.55 cents at the south ports for the previous crop. The Mission thus apparently anticipated an average increase of about 1 cent per pound in the cost of sugar production in Cuba for 1919 as compared with 1918.

The price situation, as it appeared in June, 1918, may be summarized as follows:

[1] That is to say, it was anticipated that about 10 per cent of the production for 1918–19 would be produced at a cost over 9 cents per pound. A basic price of 10 cents per pound would thus be required in order to give these producers a profit of one cent per pound.

1. Cuba, which normally supplied the United States with 49.8 per cent [1] of the total annual supply, requested a basic price for raw sugar of 5.55 cents per hundred pounds f. o. b. Cuba. This price was considered sufficient to stimulate production in Cuba.

2. The domestic beet sugar industry which supplied 15.97 per cent [1] of the total annual consumption of the United States required a basic price of at least 9 cents per pound for refined sugar to maintain production.

3. The domestic cane industry in Louisiana, which supplied 6.27 per cent [1] of the total annual consumption of the United States required a basic price for refined sugar of about 10 cents per pound to maintain the production.

4. The Hawaiian industry which supplied 13.66 per cent [1] of the total annual consumption required about the same price as the domestic beet industry.

If the price of sugar was to be raised only sufficiently to meet the needs of the Cuban producers, the resulting basic wholesale price for refined sugar at seaboard refining points would have been 8.54 cents per pound. The difference between 8.54 cents and the 5.55 cents paid to the Cubans for raw sugar would have been made up as given in the table on the next page.

Between the above price of $8.54 per 100 pounds for the refined Cuban sugar at seaboard points and the basic net cash price of $8.82 [2] desired for the domestic beet sugar there was a differential of 28 cents per 100 pounds. The dilemma confronting the Food Administration was either to advance the price of sugar in the United States to 8.82 cents,[2] thus covering the needs of the domestic industry, but giving the Cubans 28 cents a 100 pounds more than they had asserted was essential to maintain

[1] Average for years 1911–12 through 1914–15, compiled from figures on p. 446 of The Cane Sugar Industry, Miscellaneous Series, No. 53, of Department of Commerce.

[2] The list price of 9.00 less 2 per cent for cash.

Basic price for 96° test centrifugal sugar f. o. b. Cuba per 100 lbs.	$5.55
Duty, freight, and insurance	1.45
Refiners' existing margin (net cash basis)	1.30
Probable increase in refiners' margin essential to meet increased cost of refining [1]	.15
Plus 7 per cent of increased price of raws [2] to refiners	.09
Basic (net cash) wholesale price for refined sugar per 100 lbs.	$8.54

and stimulate the Cuban production, or disregarding the previous promise to the domestic industry to advance the price only to $8.54, the point where the Cuban production would be maintained.

There were two objections to the first plan — the fixing of a price of 8.82 cents:

1. It would have involved the payment to Cuba by the people of the United States of about $18,000,000 more than was essential to maintain the Cuban production during 1919.

2. The Allies, particularly the United Kingdom, who wished to buy about one-third of the Cuban crop to meet their needs, as they had done in the previous year, strongly objected to making this unnecessary payment to Cuba.

There were, on the other hand, several objections to the second plan — the fixing of a price of 8.54 cents:

1. The Food Administration, as explained above, had assured the beet sugar producers that if they would abide by the recommendations of the various state commissions relative to the prices to be paid farmers for beets, the Food Administration would undertake, so far

[1] Not only were producers' costs mounting but refiners' costs as well. The refiners had complained to the Food Administration early in the year that the increased cost of labor and supplies made it essential that the margin determined upon in October, 1917 be changed. Mr. Hoover thereupon appointed Mr. Oscar S. Straus, Chairman of the Public Service Commission in New York, to investigate the claims of the refiners. An increase of about 15 cents per hundred pounds seemed essential in view of the change in conditions since October, 1917.

[2] Required to cover the 7 per cent loss of sugar in the melting process.

as it was able, to obtain for them a fair price for the sugar made from these beets. As the figures indicated above show there was no question that the beet sugar producers had done as requested and the Food Administration in turn was under obligations to maintain its previous promise.

2. The lower price would have had a tendency to discourage the domestic sugar production, every ton of which saved an equivalent amount of shipping tonnage. The importance of the domestic industry was emphasized in June by the sudden appearance on the Atlantic coast of German submarines which sank 13,000 tons of sugar in a few days.

The problem might have been solved by the imposition of an additional import duty on foreign sugars equal to the difference of 28 cents in the costs of production. To this policy there were two objections:

1. New legislation would have been necessary to effect this change and such legislation might have involved contention and delay when immediate action was essential.

2. There was a possibility of bringing sugar to the United States from Java in the Dutch ships, negotiations for which were pending in June, 1918 and this sugar, in view of the high cost of transportation might have been excluded by such an additional duty.

The one practical solution was the creation of a sugar commission, such as Mr. Hoover had suggested to the Senate Committee on Agriculture in June, 1917, which would purchase sugar in coöperation with the Allies, who already had similar organizations. Such an organization could purchase from Cuba, Java, Peru, or from any foreign source of supply at any price that was desirable with a view to better economy of supplies and shipping for all the Allies, and resell to the American refiners at an average price.

(b) *Problems Relating to Supply and Distribution*

A careful inventory made in the spring of 1918 of the available supplies for the United States for the seven months, June–December, 1918, revealed the strong probability of a sugar shortage. It was of course difficult to foretell exactly the size of the various crops at that early date. Varying weather conditions in Cuba between June and August could easily account for a difference of some 200,000 to 300,000 tons or the equivalent of almost a month's supply for the United States. The estimates for the crop by the experts varied from 3,200,000 long tons [1] to 3,589,429 long tons,[2] and it was of course advisable to use as a basis the most conservative figures. The situation then appeared as follows:

(Quantities in short tons, 000's omitted)

Stock on hand June 1, 1918		298
Raw cane (in refiners' hands)	163	
Beet sugar	85	
Refined cane sugar (in refiners' hands)	50	
	298	
Expected receipts (June 1–Dec. 31, 1918)		1,981
Cuban	954	
Hawaiian	338	
Porto Rican	189	
Domestic cane	150	
Domestic beet	350	
	1,981	
Total stocks and receipts (raw and refined)	...	2,279
Total stocks and receipts (in terms of refined)	...	2,150
Requirements for U. S. consumption in terms of refined sugar on normal basis (June 1–Dec. 31, 1918)		2,616
Deficit considering U. S. consumption only	466	
Deficit considering required minimum exports to Allies of about 200,000 tons	656	

[1] Willett and Gray's estimate.

[2] Estimate of the Cuban statisticians — Messrs. Guma and Mejer.

It was evident then that the margin between the available sugar supply and the requirements of the United States both for consumption and export to the Allies, for the year 1918, would be a narrow one at best. This situation was due to three causes, first, the efforts to restrict the consumption of sugar in the United States by appeal to the public for voluntary conservation had not been sufficiently fruitful; secondly, there was no reserve supply of consequence on hand in the United States, either in refineries, mills or warehouses, or in the hands of wholesalers, jobbers, and retailers; thirdly, the Allies in order to economize shipping were becoming increasingly dependent on the western hemisphere for their supplies. It will be of importance to consider each of these matters more in detail.

Difficulties in Restriction of Consumption. The problem of reducing the sugar consumption of the United States was an extremely difficult one. The pre-war annual per capita consumption of the United States was about 83 pounds, as compared with 42 pounds for France and 90 pounds for the United Kingdom. The per capita consumption of the United Kingdom in 1917 had been reduced to about 52 pounds while France was consuming at the rate of 35 pounds. There was, therefore, considerable room for reduction of sugar consumption in the United States. But war conditions tended to increased consumption in the United States. For one result of the war had been the increased prosperity and the increased purchasing power of a very large part of the consumers. Sugar is normally used, unlike many other food commodities, as a constituent in many other food products so that the demand for sugar multiplied in all directions. Condensed milk, candy, soft drinks, canned fruits and vegetables, ice cream, flavoring extracts, chewing gum, sweet pickles, catsup, chili sauce,

baked goods and many other edible products, all require sugar, as also certain non-edible products such as tobacco, dental preparations, drugs, explosives and glycerine. Products such as condensed milk were exported in large quantities to the Allies and the sugar so used was therefore not to be considered as consumed by the people of the United States, but the effect was to create a larger demand for sugar in this country. In addition the armed forces of the United States consumed much more sugar per capita than the civilian population. Considerable amounts were shipped for the Red Cross, Y. M. C. A., Knights of Columbus, and other war organizations.

The Food Administration had endeavored in accordance with its general policy of voluntary conservation in the first and second periods of its control of sugar to combat this tendency towards increased consumption through appeals to the patriotism of the public and of the dealers. There has been a general impression both in and out of the Food Administration that these appeals to patriotism did not result in any saving. The figures available demonstrated, however, that a saving was affected. Consumption remained at the pre-war level when a large increase in consumption would have been anticipated.

Conservation through patriotic appeal alone was not sufficient, however, particularly in view of the probable continuance of the war for another year. It was essential to create some restrictive mechanism, which the Food Administration could count upon as being definitively productive of results whenever quick results were desirable. Any card rationing scheme such as existed in Europe involved a large expense for printing cards for a population of over 100,000,000 [1] and a still greater expense for general supervision and execution.

[1] It was estimated that the printing cost alone would have been $100,000 a month.

It was obvious that to satisfactorily solve the problem there was need for the creation of such a corporation as Mr. Hoover had originally suggested which could undertake the problem of sugar distribution and control and pay the expenses of such undertaking through a profit made in the purchase abroad of the foreign sugars and the resale to the American refiners.

The Reserve Stocks. The sugar supply of the United States at any one time consists of these parts: first, the "visible" stocks, that is raw and refined sugars held in mills, factories, refineries, and bonded warehouses in the United States; second, the "invisible" supply, or sugar held by hotels and restaurants, sugar-using industries, jobbers, wholesalers and retailers; third, the sugar available from the current seasonal production in the various sources of supply, principally Louisiana, the beet sugar territory of the United States, Cuba, Hawaii, Porto Rico, and the Philippines. A gradual attenuation had occurred during the war in both the "visible" and "invisible" supplies of sugar in the United States.[1]

[1] The following figures (taken from Willett and Gray's Weekly Statistical Sugar Journal, vols. 36-41, for the years up to 1918, and from the records of the International Sugar Committee for 1918) show the decline in refiners' stocks of raw sugars at Atlantic ports refineries during the war:

STOCKS OF RAW SUGAR AT ATLANTIC PORTS REFINERIES ON 1ST OF MONTH

(LONG TONS RAWS)

Month	1912	1913	1914	1915	1916	1917	1918
January	72,849	45,065	59,934	94,677	65,181	42,190	5,697
April	186,569	184,115	157,573	116,137	92,006	274,284	27,071
July	190,110	308,767	278,590	256,849	177,436	290,718	98,643
October	89,958	155,293	260,343	131,637	94,747	56,028	29,039

Beet sugar stocks as reported by the Department of Agriculture (Food Survey, vol. ii, Nos. 7 and 17) on July 1, 1918 were 73.6 per cent of the stocks on July 1, 1917; stocks in warehouses on July 1, 1918 were but 30.5 per cent of the stocks on July 1, 1917; wholesalers' stocks were but 71.6 per cent, retailers' stocks were but 73.7 per cent. Bakers' stocks were 92.9 per cent and confectioners' stocks were 68.5 per cent of the stocks held on July 1, 1917. Milk condensers and manufacturers of preserves had larger stocks on July 1, 1918 than on July 1, 1917. The total stocks of sugar reported for the United States as a whole on July 1, 1918 were but 67.3 per cent of stocks held on July 1, 1917.

This decline was due to a combination of several factors. First, the shipping situation for the United States had not been such as to encourage the movement of more sugar from Cuba, Hawaii, and Porto Rico than was necessary to meet current needs. Second, the stabilization of prices and profits for all the branches of the sugar industry from refiner to retailer had a strong tendency to discourage larger holdings than was essential for a "hand to mouth" trade. In previous years the speculative factor had induced larger holdings of sugar particularly in those months of the year when there was heavy sugar production in all the sources of supply. During the war, on the other hand, with the price of sugar stabilized and with the prospect of equitable distribution of the available sugar supplies by government control there was no inducement to accumulate stocks. Third, there was a general world shortage of supplies, particularly for Allied and neutral countries, and this shortage forced reduced surplus holdings in all importing countries.

In view of this reduction in marginal supplies the Food Administration was constantly in fear of a sugar famine if there should be any interruption in the continuous flow of sugar to the United States from Cuba, Hawaii, or Porto Rico. Moreover there was always the possibility of labor disturbances in the sources of supply or in the ports of the United States. It was felt that it was necessary to provide the United States with a reserve supply of at least two months requirements of sugar or about 600,000 tons.[1] Such an undertaking, however, required large financial resources and could not properly be managed by the existing agencies in the Food Administration.

[1] The Food Administration was influenced in this direction by the example of the British Ministry of Food which had accumulated 271,000 long tons of sugar on June 1, 1918 as against only 30,000 tons on June 1, 1917 and 243,406 tons, the pre-war average for June 1.

The Sugar Position of the Allies. As the war continued the Allies turned in increasing degree to the United States and Cuba for supplies of sugar. The following figures show to what extent this was true:

IMPORTS INTO THE UNITED KINGDOM, FRANCE, AND ITALY FROM THE UNITED STATES AND CUBA

(Quantities in short tons)

	1913	1914	1915	1916	1917
Imports from United States (mostly refined)					
To United Kingdom	....	141,602	211,346	187,803	42,534
France	....	978	210,648	275,644	232,726
Italy	....	....	....	32,830	20,962
	....	142,580	421,994	496,277	296,222
Imports from Cuba (mostly raws)					
To United Kingdom	251,134	293,290	402,915	619,992	789,032
France	21,382	37,636	6,801	120,196	61,243
Italy	....	....	....	6,285	3,823
	272,516	330,926	409,716	746,473	854,098
Total imports from United States and Cuba — into United Kingdom, France and Italy	272,516	473,506	831,710	1,242,750	1,150,320

While the production of sugar in Cuba and the United States had increased considerably in this same period there had been a simultaneous increase [1] in consumption in the United States which partially neutralized this gain in production.

The net result of the operation of the several factors noted was to leave a smaller margin of supplies for the United States for domestic use in 1917 than was present in 1913. But in 1918 the drain from the Allies was to be even greater, since the United States Food Administration acting in coöperation with the Allied governments had purchased in December, 1917 the entire Cuban exportable surplus for the United States and Allies, a full third of which, or approximately 1,150,000 short

[1] This increase in production amounted to about 1,049,000 short tons while the increase in consumption amounted to about 225,000 short tons of refined sugar. The requirements of the United Kingdom, France and Italy from the United States and Cuba increased 877,000 tons in this period.

tons, was to go to the United Kingdom, France, and Italy. When the contract was made in December, 1917 it was believed that the needs of the Allies would be met fully by this allotment together with other minor sources of supply which they could tap. The great effort, however, put forth by the United States and the Allies in 1918 did not tolerate any waste of shipping and it was found in June that, assuming a Cuban exportable surplus of 3,472,000 short tons, at least an additional 112,000 tons of refined sugar would be required in order to maintain the meagre rations of the Allies and to prevent their recourse to distant markets such as Java.

So much then for the problems facing the Food Administration in connection with the 1918–19 crops. Solution of the price problems was required immediately since beet sugar made from the new crops was about to enter the market. The problems relating to supply and distribution were even more pressing since a severe sugar shortage was threatening. The following pages discuss the manner in which these two sets of problems were met.

III. The Solution of these Problems through the Formation of the United States Equalization Board

(a) *Formation of the Board*

As has been suggested above, the problems facing the Food Administration, relative to both prices and distribution, were capable of satisfactory solution only by the creation of government sugar corporation for which the Grain Corporation supplied a precedent. The Food Administration itself, having no authority under the

Food Control Act to buy sugar, recourse to the President's war emergency powers and funds was necessary. The corporation was created by authorization from the President of the United States who set aside $5,000,000 for the purchase of the capital stock of the corporation out of his emergency fund of $50,000,000, provided in the "Sundry Civil Act" of July 1, 1918. The Board was incorporated July 11, 1918 in the state of Delaware and the first meeting of the Board of Directors took place on July 18, 1918.

On July 11, 1918 the Food Administration issued the following notice:[1]

> The President has approved the formation of a sugar equalization board by the Food Administration. The Board is to be composed of: Herbert Hoover, chairman; George M. Rolph, president; Directors: Professor F. W. Taussig, of the United States Tariff Commission; Theodore F. Whitmarsh, George A. Zabriskie of the Food Administration; Clarence Woolley of the War Trade Board; William A. Glasgow, Jr., Chief Counsel of the Food Administration. The office of the Board will be in Washington.
>
> The purposes of the Board are to equalize the cost of various sugars and secure the better distribution. The arrangements will facilitate joint dealing with the Allies in foreign sugars and the adjustments of differentials in overseas freight rates. Under certain circumstances, it may be advisable to acquire the production of some beet sugar factories that cannot under the present price of beets be sold to the public at a reasonable price. The Board will take charge of the distribution plan initiated on July 1, and will conduct this plan at the expense of the Board. The Board will be incorporated to the extent of $5,000,000 of capital which will be supplied by the President from his special funds, in order to enable it to deal with facility in foreign sugars and otherwise and the whole stock will be held by the President for the United States Government. The object is to absorb the high peaks of cost in sugar production and to make a small margin on the low cost of certain foreign sugars which may be purchased and thus secure an equalization of the price to the public on a lower level than will otherwise be possible. The arrangements will further secure an even distribution of the sugar throughout the United States. It is expected that any profit will be equalized to the consumer over the year's operations.

[1] News Release, No. 1061.

With the formation of the Sugar Equalization Board, the sugar problem, as such, was practically solved, at least from the viewpoint of the Food Administration, since there had been created a responsible body, the function of which was the determination of general policies in relation to the various problems which might arise. Moreover, with the capital stock of $5,000,000 supplied by the President as a basis for financial operations, with the further possibility of obtaining a margin of profit on the import of foreign sugars throughout the crop year, the corporation could relieve the Food Administration of the large expense involved in the proper control of an equitable distribution.

(b) *The Solution of the Price Problem*

The directors of the Sugar Equalization Board began action looking towards an agreement on the price of sugar for 1919 by hearing the representatives of the various sugar producers. The Cuban Mission appeared before the directors of the Board on August 9 and maintained their position as previously presented to the Food Administration that a price of $5.60 per 100 pounds was essential in order to yield a fair profit to the Cuban producer. The majority opinion of the directors of the Board was that $5.25 per 100 pounds would be sufficient. No agreement was possible on this basis, and the Cuban Mission was asked to report to the Cuban government for further instructions. On the same day there appeared the representatives of the beet sugar manufacturers who presented figures of costs and requested a price for refined sugar at seaboard points of not less than 9 cents per pound. On the following day the representatives of the Hawaiian producers came before the Board, submitting cost figures and urging

that the price of their raw sugar be fixed at not less than 7 cents per pound, but recommending that the price be fixed at 7½ cents. On August 16, the directors heard the Louisiana producers who urged that the price of raw sugar be fixed at not less than 8 cents per pound.[1]

These hearings only served to emphasize what had already been made clear by the cost investigations made by the Food Administration and the Tariff Commission. The Cuban price of 5.60 cents per pound f. o. b. Cuban ports reflected a basic price for raw sugar of only 7.05 cents per 100 pounds at seaboard refining points after freight, insurance and duty were added. The resulting basic price for granulated sugar, after adding the refining margin of 1.54 cents,[2] would have been 8.59 cents. The price of 7.05 cents for raw sugars might have been satisfactory to the Hawaiians who had asked for a minimum price of 7 cents per pound, altho they had urged a price of 7.50 cents to maintain production, but would not have been satisfactory to the Louisiana producers who had requested a price of 8 cents per pound for their raw sugar. The price for refined sugar of 8.59 cents would have been unsatisfactory to the beet sugar producers who had asked for 8.82 cents.[3]

After some further negotiations with the Cuban Mission an agreement was reached. The contract was closed on September 13, 1918, the price being $5.50 per 100 pounds f. o. b. Cuban ports. The Food Administration announced that the purchase had been made on behalf of the American, English, French, and Italian governments, a departure from the preceding year's contract when the purchase was made jointly by the

[1] The Porto Ricans did not send representatives to Washington since they felt that any price basis established which would be suitable for the beet sugar or Hawaiian industry would be suitable also for the Porto Rican industry.

[2] Net cash basis.

[3] Ibid.

United States and Allies acting through the International Sugar Committee.

While the negotiations were being conducted with the Cubans, the question of the refiners' margin was also being taken up. The report of Mr. Oscar Straus, who had been appointed by Mr. Hoover earlier in the year to investigate the cost of refining, was submitted to the Board as a basis for a decision. Mr. Straus had reported as follows:

1. That the $1.30 margin in existence from January 1 to July 1, 1918 gave a fair and adequate profit.

2. That "if conditions should remain the same for the remainder of the year no additional margin would be justified, but that the possibilities of lack of raw sugar, increase of wages, and in cost of materials, fuel, and containers would have a bearing on the proper decision."

3. "That since he could not decide upon the probability of these contingencies he referred the settlement of this matter to the Food Administration." [1]

The Board examined the figures submitted of increasing costs of labor and materials and of the probable amount of raw sugar available for melting in the period August 1, 1918–December 31, 1918. It was estimated that the amount of raw sugar available for refining for this period would be 813,676 long tons, an average of 162,735 long tons per month, as against a total of 2,138,954 tons or an average of 305,565 long tons per month for the period January 1–August 1, 1918. As matters actually developed, the amount refined in the period was 947,128 tons which was 133,452 tons above the estimate [2] but still much below the average of the first seven months of the year. The Board decided that an increase

[1] News Release, No. 1151, August 25, 1918.

[2] This increase over the estimate is accounted for by the final outturn of the Cuban crop, which was 3,444,605 long tons against Willett and Gray's estimate of 3,200,000 long tons.

in margin was justified and on August 25th, the Food Administration announced that, dating retroactively from August 1st, the new margin would be $1.45 per 100 pounds.

With the price for new Cuban crop sugars and the refiners' margin decided upon, a minimum basic price for sugar was thus established, since the new Cuban price with duty, freight, and insurance added plus the new refiners' margin would net a price for refined sugar at seaboard points of 8.49 cents. This price would, of course, have been unsatisfactory to the domestic producers, beet and cane, since this price was 33 cents per 100 pounds below the price requested by the beet sugar producers, and $1.05 per 100 pounds below the price requested by the cane producers. Moreover, on the 8.49 basis there would have been no differential accruing to the Board for financing the distribution of sugar.

Accordingly the Board decided to adopt a basis of 9 cents for refined sugar for the whole country (8.82 net cash); the differential of 33 cents per 100 pounds on foreign sugars to be turned over to the treasury of the Equalization Board. The whole plan was then as follows:

Basic price for refined sugar, cane and beet, 9 cents per pound	8.82 cents net cash
Refiners' margin	1.54
Basic price for all raw sugars, paid to the Board by refiners	7.28
Margin to the Board	.33 [1]
Cost of raw sugar to the Board	6.95
Freight, insurance, and duty	1.45
Basic price of Cuban sugars f. o. b. Cuba	5.50

[1] As it actually turned out in 1919, the margin was increased to 38 cents owing to the elimination of the war risk insurance of 5 cents per hundred pounds.

It is of interest to compare, as in the following table, the various prices actually obtained by the producers in the different sources of supply with the prices they had originally requested and with the prices in effect the preceding year:

Source of supply	Per cent of total pre-war consumption of U. S. supplied by each source of supply	Basic prices requested (in cents per pound)	Basic prices actually obtained (in cents per pound)	Basic prices in effect preceding year (in cents per pound)
Cuba (raw sugar)	49.8	5.55	5.50	4.55
Hawaii (raw sugar)	13.66	7–7.5	7.28	6.005 [1]
Porto Rico (raw sugar) ...	8.01	7–7.5 [2]	7.28	6.005 [1]
Louisiana (raw sugar)	6.27	8	7.28	6.35
United States beet (refined sugar)	15.97	9	9	7.30

The only remaining problem was to find a suitable date for putting the new scheme into operation. Since the new crop of Cuban sugars would not be available till December there was sufficient time to work out all details of the agreement with the Cubans. But the new beet sugar was already available in the West and it was essential, particularly in view of the scant supplies in the country, to make an agreement with the beet sugar producers in order that the 1918–19 crop might be freely available for distribution. Obviously, until this agreement was reached and the new price basis established, beet sugar producers could not ship their sugars. To put the new price into operation immediately involved having the " new domestic crop at the new price and the old foreign crop at the old price in the market at the

[1] This price was increased to 6.055 on June 24, 1918 owing to the increased cost of war risk insurance.

[2] No special price was requested but it was generally understood that the Porto Rican producers were well satisfied with the price requested by the Hawaiians.

same time." [1] To avoid this the Board decided to purchase all sugars in the refineries and cane and beet sugar mills of the United States, including all sugars in process or in transit, at the old price of 6.055 cents per pound for raw sugar and 7.35 cents for refined sugar and immediately to resell these sugars to the holders at the new price of 7.28 cents for raw sugars and 8.82 cents for refined sugars. The refiners were to be allowed the increased margin of 15 cents on all sugars delivered and invoiced from August 1st to the date when the new price was to go in effect. Through this device, the profit which would otherwise have been made by the refiners and beet sugar producers through purchase at the old price and sale on the basis of the new price, was to be absorbed by the Sugar Equalization Board. The date of this change was to be announced at a future date. On September 6, 1918, the Food Administration announced that the change would become effective on Monday morning, September 9. Wholesalers and retailers were warned not to average their prices but to sell upon the old basis until their stocks of the lower priced sugars were exhausted. From September 9 till the end of the year, the refiners purchased all their sugars from the Sugar Equalization Board at a price of 7.28 cents per pound. The Board absorbed the differential of 1.225 cents per pound between this price and the 6.055 cents per pound, the duty paid price for raw sugars of the 1917–18 crop.

As a result of these various activities, the Board drew revenue from three general sources:

1. It obtained a differential between the old and new price on the refiners' and beet sugar manufacturers' inventory of raw and refined sugar of September 9, 1918.

[1] News Release, No. 1151, August 25, 1918.

2. It obtained a differential between the old and new price on all arrivals of old crop cane sugars after September 9, 1918.

3. It obtained a differential of 38 cents [1] on all new crop foreign sugars (which began to arrive in December, 1918) between the duty paid price of $6.90 per 100 pounds for Cuban raws and the price to refiners of $7.28.

The revenue account of the Board on October 15, 1918 was as follows: [2]

UNITED STATES SUGAR EQUALIZATION BOARD, INC., REVENUE ACCOUNT

(from July 1 to October 15, 1918)

By cane sugar sales		$35,611,235.00
By beet sugar sales		3,095,011.66
		$38,706,246.66
Less		
Cane sugar purchases	$30,471,995.79	
Refunds on shipments to Allies under old contract	626,947.66	
Beet sugar purchases	2,579,176.37	33,678,119.82
		$5,028,126.84
By bank interest received		18,536.84
		$5,046,663.68
To salaries — general office	$5,302.07	
To salaries — federal food boards	219,616.70	
To office — general office	3,042.03	
To office expenses — federal food boards	95,543.13	322,503.93
Net income transferred to balance sheet		$4,724,159.75

[1] See footnote, p. 698 for explanation of change from 33 cents to 38 cents.

[2] From the official statement of the United States Food Administration, November 1, 1918, No. 6, p. 18.

(c) *The Agreements with the Producers and Refiners*

Once having disposed of the price problem the road was cleared for the execution of agreements with the various producers. The agreement entered into on October 24, 1918 between the Sugar Equalization Board, the Cuban Commission, and the agents of the Cuban producers contained the following provisions:

1. Sugars were to be purchased for shipment to the United States at the price of 5.88 cents [1] per pound "cost and freight," to New York or Philadelphia.

2. Sugars were to be purchased for shipment to the United Kingdom, France, and Italy at a price of 5.50 cents per pound f. o. b. northern ports or 5.45 cents per pound f. o. b. southern ports.

3. Shipments of sugar were to be made immediately after the beginning of the crop, not less than 2 per cent of the amount to be shipped on December, 1918 and the remainder in approximately equal monthly shipments from January to November, 1919.

4. Provisions were made in the agreement for brokerage, marine insurance, lighterage and so forth.

On September 18, 1918 an agreement with each individual beet sugar producer was entered into by Mr. Herbert Hoover, the United States Food Administrator, as had been done in the previous year. The main provisions of these uniform agreements were as follows:

1. A central "Sugar Distributing Committee" was created to "direct the distribution of the beet sugar crop in the most economical and efficient method consistent

[1] This price was based on the freight of .38½ cents per 100 pounds from north side ports, west of and including Caibarien, to New York or Philadelphia. The differentials between this freight rate and the rate to Boston or southern ports were to be added to or subtracted from the basic price of 5.88 cents.

with an equitable distribution of sugar where needed throughout the United States." [1]

2. Every producer agreed to abide by the rules and directions of the Sugar Distributing Committee and to sell at a price not to exceed the basic maximum price of 9 cents per pound at seaboard refining points.

3. The Sugar Distributing Committee was empowered to make a final settlement to individual producers at the close of the crop, based on the "average net proceeds per pound of sugar resulting from the sale of all sugars" [2] of the 1918–19 crop.

An agreement of the same character as that with the beet producers was entered into by the Food Administrator and the Louisiana cane sugar producers. A committee called the Louisiana Sugar Committee was created to direct the distribution of Louisiana sugar, under the supervision of the Food Administration. The basic price for raw sugar at customary Louisiana refining points was not to be "greater than the price which may be found to be just and fair by the United States Food Administrator and not less than the price of duty paid 96 degree Cuban raw sugar delivered at such refining points." [3] The minimum basic price for Louisiana raws was thus established at 7.28 cents per pound. The basic price for Louisiana refined sugar was to be the price determined by the Food Administrator "under provisions of his uniform contracts with the sugar refiners of the United States, dated October 1, 1917." [4] For the Louisiana crop of 1918–19 this arrangement meant a basic net cash price of 8.82 cents per pound.

[1] Agreement with the United States Food Administration as to Sale and Distribution of Beet Sugar Crop, 1918–19, p. 6.

[2] Ibid., p. 5.

[3] Agreement with the United States Food Administration as to Louisiana Sugars, p. 5.

[4] Ibid., p. 3.

Price differentials were established in the agreement for the many different grades of so-called "direct consumption" sugars manufactured in Louisiana.

An agreement [1] dated October 24, 1918 was entered into between the Equalization Board, the refiners of the United States, and the Food Administrator, the chief provisions of which were as follows:

1. The refiners agreed not to purchase any sugar for delivery during 1919, except from the Equalization Board.[2]

2. The allocation of sugar to the different refineries was to be based on a percentage scale which was incorporated in the agreement.

3. An "American Refiners' Committee" was created to direct the distribution to the refineries of the sugar obtained by the Equalization Board.

4. The refiners agreed to sell all their refined sugar at a price not to exceed 1.54 cents per pound above the price paid for raw sugar to the Equalization Board.

5. The Equalization Board agreed to supply the refiners with their requirements of raw sugar for 1919 at a price of 7.28 cents a pound.

6. In event of a decrease in the price of sugar in 1919 the Board agreed to pay the refiners the amount of their loss; in the event of an increase in the price of sugar, the refiners agreed to pay the Board the amount of their gain.

[1] The Federal Sugar Refining Co. felt that this contract with the refiners might constitute a violation of the Sherman Anti-Trust Act. The Food Administration therefore requested the opinion of the Attorney-General who, in a statement issued January 9, 1918, upheld the legality of the contract.

[2] Except such sugars of the 1917–18 crop as were provided for under the agreement of the previous year and Hawaiian sugars contracted for by some of the eastern refineries.

(d) *Solution of the Problems Relating to Supply and Distribution*

The Food Administration began activities aiming at an effective control of distribution in the spring at 1918. On May 4, it announced [1] that all manufacturers using sugar, with the exception of those making essential food products,[2] were to be restricted to 80 per cent of the preceding year's requirements. Manufacturers who began business or enlarged their capacity after April 1, 1918, also all manufacturers of non-edible products with certain exceptions,[3] were to receive no allowances of sugar. The restrictions were to be made effective through the use of a certificate system controlled by the federal Food Administrators of each state who were to issue certificates to all manufacturers upon receipt of sworn statement as to requirements. No sugar manufacturer or distributor was to deliver sugar to any one without first receiving certificates. All these regulations were to apply to the period from May 15 to July 1. On June 1, 1918, the Food Administration announced [4] "that manufacturers who now have on hand sugar that, when added to the amount already used this year, will bring their quotas above 80 per cent of the amount used from January to July, 1917, must turn over the excess to their administrators at once, or be prosecuted as hoarders."

The second step in the process of obtaining control over sugar consumption was the division of all users of sugar into five classes, denoted as A, B, C, D, and E. Class A comprised all non-essential industries. These

[1] News Release, No. 916.

[2] Included under this head were commercial fruit preservers and packers of vegetables, milk condensaries, jam manufacturers, and ice cream manufacturers (to encourage maintenance of milk production).

[3] These exceptions were manufacturers of tobacco, explosives and drugs.

[4] News Release, No. 985.

were to be restricted for the period July 1–September 30 to 50 per cent of their consumption in the corresponding months of 1917.[1] Class B included all the industries using sugar for preserving and canning fruits and vegetables, that is, the essential food industries. These were to be allowed their full needs. Class C included all public eating places regularly serving 25 persons or more. These were to be allowed 3 pounds of sugar for every 90 meals served in the third quarter of 1917.[2] Class D included all manufacturers of baked goods, who were to receive 70 per cent of the 1917 consumption. Finally, Class E included retailers and all dealers selling sugar for direct consumption, who were to be allotted their requirements based on 3 pounds per customer per month. This plan, directed from Washington, was put into operation by the state Food Administrators through the use of certificates. The retail grocer and the other classes of businesses described above received from their state Food Administrators "Sugar Distribution Certificates" of different quantitative denominations covering their sales of sugar to different types of customers. These certificates passed from retailer to wholesaler and from wholesaler to refiner or beet sugar manufacturer, unless, of course, the retailer bought directly from the refiner or manufacturer of sugar. The refiner or manufacturer then returned these certificates to the state Food Administrators who had issued them.

The whole plan thus involved the creation of a clerical staff in each state to attend to the issue and cancellation of certificates and a considerable expense was thus imposed upon the offices of the state Food Administrators. This expense was assumed by the United States Sugar

[1] Manufacturers of milk chocolate, however, could use 75 per cent of the amount of sugar used during the third quarter of 1917 for condensed milk.

[2] The month of June, 1918 could be used as a basis instead of the third quarter of 1917.

Equalization Board when it undertook the control of the entire plan shortly after its incorporation. One of the directors of the Board, Mr. George A. Zabriskie,[1] had already been appointed to take charge of the wholesale and retail sugar distribution for the United States and the Board assumed financial control as well.

The whole scheme under the Board's jurisdiction worked out about as follows:

1. The President of the Board constantly communicated with the Cuban Producers' Committee and with the Allies through the offices of the International Sugar Committee [2] and determined the amount of the Cuban 1917–18 crop available for distribution to the United States after the Allied requirements had been met. From the Statistical Departments of both the International Sugar Committee and the United States Food Administration and from representatives in each locality, he received information as to the amount of sugar available from other than Cuban sources of supply — Porto Rico, Hawaii, Philippines, etc. The Army and Navy, the Red Cross, the Belgian Relief, the Y.M.C.A., Knights of Columbus, and other relief organizations advised him of the amount of sugar they would require and finally the United States Shipping Board advised him of the amount of shipping tonnage that could be utilized to transport sugar to the United States. It was thus possible to approximate the amount available for civilian sugar distribution in the United States for each month.

2. A scheme of equitable allocation to individual states was then worked out based on the population of

[1] Mr. Zabriskie had been in charge of flour distribution and on June 25, 1918 the Food Administration announced that both flour and sugar wholesale and retail distribution would be attended to from his office as the distribution division of the Food Administration.

[2] This was the organisation created in December, 1917 to allocate the 1917–18 Cuban crop among the Allied governments and to the various refiners of the United States.

each state, the normal needs of each state [1] and the normal sugar deliveries into each state.[2]

3. Each state Food Administrator then was notified as to the amount available for distribution for his state each month for all civilian purposes. The details of the distribution within the state under the certificate scheme were left to the discretion of the state Food Administrator.

By virtue of agreements entered into by the Food Administrator with the Louisiana sugar producers and the beet sugar manufacturers, central distributing committees were created to handle the distribution of the new crop domestic sugars under the direction of the Sugar Equalization Board in accordance with requirements for an economic and equitable distribution for the country as a whole, while through the agreement with the cane sugar refiners, the Board was able to direct the movement of sugars leaving the refineries. Thus it was possible to move sugars at any one time from regions of plenty to regions of scarcity, any unusual expenses incurred in such movements being met out of the funds of the corporation. In practical operation it was found essential to divide the country into zones of distribution, each zone being supplied from the nearest and most effective sources of supply.[3]

The scheme as outlined above was extremely effective in the creation of a rigorous yet elastic control over sugar consumption and distribution. The sugar ration for household use and the allowances to the various in-

[1] Including the requirements of its industries as determined from statistical investigation by the state Food Administrators.

[2] As reported by refiners and beet sugar manufacturers to the Food Administration.

[3] The rules and regulations issued from time to time to beet sugar factories, refiners, and Louisiana producers relative to distribution are too many to discuss in detail here. Briefly, however, the general plan was to increase the territory of the beet sugar producers as increased beet sugar supplies became available while at the same time decreasing the territory in which cane sugar refiners or Louisiana producers could sell their sugars, thus husbanding the available supplies in regions of greater relative scarcity.

dustries were changed from time to time as the outlook for available supplies and shipping tonnage changed. Thus for the period from August 1 to November 1 the household ration was fixed at 2 pounds per person per month while for November it was increased to 3 pounds. The signing of the armistice made it unnecessary to continue rigid control and the certificate scheme was abandoned on December 1, 1918. More drastic restrictions of non-essential industries were contemplated from November 1 on, some of which were put into effect for November, but the signing of the armistice rendered such action unnecessary.

Many estimates have been made of the reduction in sugar consumption brought about in the four months of complete control, July–October, 1918, through the plan of restriction outlined above. Such attempts are of little value, first, because there are no accurate or reliable statistics of consumption in previous years, secondly, because such statistics as are available do not relate to actual consumption by consumers but to deliveries of sugar from manufacturers or refiners to the distributing trade. Moreover, no one can tell what the consumption would have been without rigid restrictions at a time when the demand for sugar was great in all directions owing to the general economic prosperity and the relatively low price of sugar as compared with other foods.

The imperative need, as stated above, was not the restriction of consumption to some particularly low point but the creation of some scheme of restriction which could be made to respond to the changing conditions of supply and tonnage. This the Food Administration accomplished without question since each state could only obtain as much sugar as was allotted to it and the problem of sugar distribution thus became a

matter of routine bookkeeping merely. Had the war continued another year it might have been advisable to embark on a policy of restriction of consumption, as a measure of economy of labor power, shipping tonnage, and fuel, and in that case, the Food Administration would have had the machinery for the purpose ready. Happily, however, the war ended and it was unnecessary.

IV. Conclusion

It will be noted that the signing of the armistice in November came but a few months after the various agreements with the producers, the creation of a new price basis, and the establishment of an effective control of distribution. Sufficient time had elapsed, however, to prove the practicability and soundness of the plan of dealing with all sugar problems through a government corporation.

An evaluation of the activities and policies of the Food Administration in dealing with sugar problems can hardly be attempted without going far afield into a criticism of the general policies of the Food Administration as applied to all commodities. Such a criticism is beyond the scope of this paper but it is necessary to note that considerations such as the relative food value of sugar in the nutritional intake of the nation, the inadvisability of incurring economic friction and popular discontent in an attempt to curb consumption through drastic compulsory measures, and the inadvisability of disturbing ordinary channels of trade and normal commercial practice in view of a possible sudden termination of the war were factors of great importance, consciously or unconsciously, in determining the policies of the Food Administration. It is only possible in this paper to note the important economic effects of government control of

sugar, first, the effect on production, second, the effect on prices.

The Cuban crop of 1917–18, which was the first crop produced under an agreement with the Food Administration was 3,446,083 [1] long tons or 422,363 tons greater than the preceding Cuban crop which was the largest crop up to that year, and the present year's crop produced under agreement with the United States Sugar Equalization Board is estimated at 4,000,000 long tons, or about 554,000 tons greater than even the previous record crop.

The beet sugar crop of the United States of 1917–18, the beets of which were planted in the spring of 1917 before Food Administration activities began, was 765,207 short tons,[2] representing a decline of 55,450 tons from the previous year's high record but 49,000 tons above the pre-war average. The beet sugar crop of 1918–19 which was produced under direct encouragement of the Food Administration as explained above was 765,063 tons, practically equivalent to the preceding crop. The Louisiana cane crop[3] was 243,600 short tons in 1917 as against 303,900 short tons in 1916 and a pre-war average of 229,000 tons, but in 1918 it rose to 263,450 short tons. The Porto Rican and Hawaiian crops show slight decreases for the last two years. The combined production in those sources of supply affected by government control increased 206,000 long tons in 1917–18 over 1916–17, and 1,301,000 tons over the pre-war average, and in 1918–19 increased 586,000 tons over the 1916–17 and 1,867,000 tons over the pre-war average. Whether or not the Food Administration was responsible for all of this increase, it is difficult to determine,

[1] Figures for Cuban production from Willett and Gray's Weekly Statistical Sugar Journal, June 12, 1919, p. 268.

[2] Crop Reporter, April, 1919.

[3] Ibid., January, 1919.

but it certainly cannot be seriously maintained in view of these statistics that the Food Administration policies tended to discourage production.

The facts as to prices are no less significant. In order to obtain this larger production, was the American consumer forced to pay an abnormally high price? The retail price of sugar increased from an average of 8 cents per pound in the year 1916 to 9.3 cents per pound in 1917 and 9.7 in 1918. Since the per capita consumption of sugar in the United States was about 79, 78 and 73 pounds in 1916, 1917, and 1918 respectively, including sugar used in all manufactured articles, the per capita cost of sugar amounted to $6.32 in 1916, $7.25 in 1917 and $7.08 in 1918, an increase of 14.7 per cent in 1917 over 1916 and 12 per cent in 1918 over 1916. The total sugar consumption of the United States for these three years amounted to about 3,658,607 tons, 3,683,599 tons and 3,495,606 tons [1] so that the sugar bill of the nation was about $665,622,000 in 1916, $767,367,000 in 1917 and $759,525,000 in 1918.

Yet altho the retail price of sugar increased only 21 per cent and the per capita cost only 12 per cent from 1916 to 1918, the beet farmers of the United States received an average price of $10.00 per ton for beets in 1918 as against $6.12 in 1916,[2] an increase of 63 per cent, while beet sugar manufacturers received an average of $8.12 per 100 pounds [3] in 1918 as compared with $6.98 in 1916, an increase of 16 per cent. Similar increases were obtained by the American refiners, the Louisiana sugar producers, the Cubans, Hawaiians, and Porto Ricans in accordance with their increasing respective costs.

[1] In long tons from Willett and Gray's Weekly Statistical Sugar Journal.

[2] Crop Reporter, April, 1919.

[3] Calculated from figures of Truman G. Palmer, "Concerning Sugar," p. 48.

The statistical evidence at hand indicates, therefore, that the American consumer did not pay for all the increase in costs of production of sugar, nor did he pay a premium for the increased production that resulted during government control. The general conclusion, to be drawn, both from the viewpoint of production and the viewpoint of prices, is that government control of sugar during the war was a decided success.

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REVIEW

WALSH'S THE CLIMAX OF CIVILIZATION: SOCIALISM; AND FEMINISM[1]

THESE three books may not improperly be called volumes I, II, and III, of the same work. In the preface to volume I the author says:

> Standing by itself, the present work is offered as a new exposition of the cyclical theory in the philosophy of history. It attempts to describe the course which all civilisations naturally run, and to locate our position in the cycle of our civilisation. This position is shown to be one near the top, or climax, and to contain premonitions of disintegration and decline. The purpose of the work is to point out these germs of decay, and to emphasize the need of guarding against fomenting and cherishing them. The two most comprehensive sources of trouble are the subjects of the two succeeding works.

The symptoms of our near approach to the climax, or of our having already passed it, the author observes from seven points of view, namely: (1) the military art; (2) economics; (3) population; (4) morality; (5) the fine arts, literature and jurisprudence; (6) religion, and (7) government. In each field of activity he observes, at least among peoples who have amounted to anything, a regular cycle from the strenuous, heroic, and masculine virtues of primitive life, up through conditions of power and prosperity, followed by the feminine virtues of softness, gentleness, sympathy and elegance, and then downward through enervation, ease, unwillingness to endure hardship, overconsumption, and decay.

In the field of economics, his cycle reminds one of E. V. Robinson's remark that when production exceeds consumption, there is progress; when consumption exceeds produc-

[1] The Climax of Civilisation, pp. 150, $1.25; Socialism, pp. 160, $1.50; Feminism, pp. 303, $2.50. By Correa Moylan Walsh. New York, Sturgis and Walton. 1917.

tion, there is retrogression;[1] tho he goes more into detail. In the field of morals he says, page 31 of volume I:

> Because of the need at first of contention, the virtues most dwelt upon, when intelligent observation was turned toward them, were the masculine virtues of fortitude, temperance, wisdom, and justice. But with the advent of the long peace and the coming into prominence of women, taking the place of those stern virtues another set of mild ones come to the fore — the feminine virtues of patience, purity, faith, and affection.

Again, on pages 32 and 33:

> By now the old intuitive morality has given way before a rationalising science of ethics, which, rejecting the old stand-bys as too rough, experiments with all sorts of new theories, and even with many which experience has long ago disproved. More attention is paid to the welfare of individuals than to the welfare of the whole society or race, and still less to its perpetuation, especially if each individual believes himself immortal. . . . Accompanying this change come new ideas about a general equality of the sexes; for women are equal to men in the point of view now emphasized — the capacity to enjoy and to consume. . . . With the breaking down of competition, there is less striving within each state as well as between states, until at last, with the diminution of production, especially if accompanied by exhaustion of the sources, a new period of hard times sets in, which generates strife again, but finds the more civilised peoples mostly unfit for it, and most likely to give way before the less civilised.

The author finds that feminism is only a part of socialism, tho he says that: "Feminism may be advocated without socialism — without the whole of which it is a part."

The significance of these volumes, however, is not to be found in the views they set forth, but in the wealth of learning and the discriminating judgment which they display. The author shows himself to be a real student, with a penetrating mind which can see through the ordinary claptrap of popular philosophy which has, unfortunately, sometimes been imported into the proceedings of learned societies.

The appearance of a cycle of growth and decay in national as in the individual life has long been a puzzle. There seems

[1] Cf. "War and Economics," Political Science Quarterly, vol. xv, p. 581.

to be no such physical necessity for the decay of a civilization as is found for the decay of a biological organism, but there are undoubted tendencies in the same direction. The very success of a race or a nation in building up a civilization seems to predispose it toward those habits which necessarily bring decay. The individual who has, by hard work and frugality, built up a fortune by producing more than he consumes will be difficult to convince that he should not stop working and begin to enjoy what he has accumulated. The difficulty will be increased with each generation of his heirs. Yet, nothing is more mathematically certain than the conclusion that if they do yield to this temptation, their consumption will soon exceed their production. If this tendency shows itself in the nation at large, it is equally certain that national wealth will thenceforward decline.

Again, even tho there are multitudes of people left in a state of poverty, the sight of so much wealth in the possession of other people will lead them to consider the cold-blooded question whether it would not be more profitable to try to rob them than to work for themselves. The sight of a conspicuously rich territorial group has never failed to arouse the cupidity of neighboring groups, provided the latter were strong enough to attempt inroads. Similarly, the sight of a conspicuously rich class does not fail to arouse an equal cupidity in the minds of other classes in the same territory whenever the latter feel strong enough to defy the laws of the land and make incursions over the class border. They who do not understand or appreciate this tendency in human nature will never have a very full understanding of the social problems of the present day. A careful reading of these three volumes should help the reader to such an understanding.

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NOTES AND MEMORANDA

ONE OF THE PHYSICAL FOUNDATIONS OF ECONOMICS

So many attempts have been made to resolve economics into a psychological science as to make it seem advisable to call attention, in some detail, to some of the physical factors which are likely to remain unaffected by psychological changes, even assuming that these psychological changes are, first, possible, and second, desirable. Some of these physical factors are so fundamental as to give character to the science of economics under all possible conditions. It seems probable that, so far as these physical factors can be ascertained, they would have to be reckoned with under any form of social organization, and with any institutional background. In certain respects, therefore, communism and capitalism, socialism and individualism, would look very much alike if they ever got into working condition, because they would have to meet certain permanent and unchangeable conditions.

It is obvious that the prime factors of production are but two in number, nature and man. There is no reason why we cannot extend this assertion to the other departments of economics, and in fact to all the other fields whose objects are the goal of human research. Production requires relations between the various parts of nature, between man and nature and between the various types of men. Whatever be the relations, there are only these two terms implied, man and nature. When economics uses these terms, it must assume their essential characters, their reactions, and their interactions, as discovered by the different departments of positive science. Economics assumes these discoveries, for it is not the

business of the economist to engage in physical and biological research, except in so far as the scientist has not concerned himself with the phenomena which are of interest to the economist. All this may appear to be a truism, and yet it has not infrequently been forgotten. As Böhm-Bawerk says at the beginning of his *Positive Theory*, even those economists who preface their works with statements of physical fact, soon forget their declarations; these statements are mere ornaments, having no connection with the rest of the work. Now and then there appears one who insists upon a firm foundation before further investigation.

There are certain facts concerning production which, as Mill remarks, are true whether we like them or not, because they are inherent in the nature of physical things. (1) The law of diminishing returns is based, as I shall try to show, upon chemistry and physics, and, like certain chemical and physical laws, is capable of being reduced to a phase of the law of probabilities. (2) The primary advantages of a division of labor are not due to any preference of ours, or to the institutions that we have seen fit to adopt. (3) The Ricardian law of rent is based upon physical variations in land as well as upon diminishing returns from land of a given grade. (4) The laws of population, while in part psychological, have still a substantial physical and physiological basis and (5) physiology, as well as psychology plays a large part in determining the laws of consumption. In a general and fundamental sense, there are certain ways of doing things that are more economical than others regardless of social or legal institutions, and of popular philosophies, fashions, etc.

The law of diminishing returns probably has more ramifications in the field of economics than any other single generalization, therefore I shall elaborate this law as a sample of the physical laws which underlie the science of economics. This law has been the object of attack especially of those whose interest in economics is secondary to their interest in social reform. It is therefore most important for us to distinguish carefully between the law itself and any conclusions that may have been drawn from it thus far, whether right or wrong.

From the older treatises on economics, the impression is given that diminishing returns is applicable only to the special case of agriculture. It is due particularly to Professor Carver that this law has become more general, and made applicable to any group of factors in production. He has insisted that this is no fleeting social phenomenon, but is a fact which has its roots in physics and chemistry. It is perhaps impossible to trace all the manifestations of this law to any one all-inclusive cause, but there is reasonable ground to suppose that it is traceable in great part to one fact which permeates all branches of science and even all activities of life. In the following attempt at a scientific explanation of this law, the procedure will be from the abstract to the concrete.

Let us take any fixed number of entities of a particular type which we may call x; then let us add to this successively increasing quantities of another type of entity which we may call y. Every time an addition is made let all the entities be paired off indiscriminately. Concerning the character of the resulting pairs as the number of y entities is increased, we can lay down this general proposition, that the number of mixed pairs, those composed of an x and a y, will increase as successive increments of y are added, but this increase in the number of mixed pairs will not be proportional to the increase in the number of y entities; the ratio of increase will be a diminishing one.

Let us next consider this case quantitatively. Suppose the number of x entities be 5, and the number of y entities added to this vary from 1 to infinity. If $1y$ is added to the $5x$, there will be 3 pairs of which 1 pair is certain to be mixed. In this case an addition of $1y$ gave us a product of one mixed pair, which is both the most and the least that can be expected. In mathematical language, the probability is here certainty, in practical language we have 100 per cent efficiency. If now we add $2y$ to $5x$, there will be a total of 3 pairs, of which we may have a maximum of 2 and a minimum of 0 mixed pair, but the probable number, or the average in the long run, will be something less than two mixed pairs but more than one. Thus by adding $1y$ we have not increased the number of mixed

pairs by 1, but by something less than 1; whereas in the first case an addition of 1y gave a certain result of 1 mixed pair. Continuing in this way we find that if we increase the number of y up to infinity, the greatest probable number of mixed pairs will be something less than 5. The following table may make this clearer:

No. of x	No. of y[1]	Maximum possible number of mixed pairs	Probable number of mixed pairs	Probability in per cent of each y meeting an x to form a mixed pair
5	1	1	1	100
5	3	3	2.14	71.43
5	5	5	2.78	56
5	7	5	3.18	46
5	9	5	3.46	38
5	11	5	3.67	33
5	21	5	4.20	20
5	95	5	4.80	.5
5	995	5	4.97	.5
5	999995	5	4.999998	.000005

It will now be apparent to those who know mathematics that the above is only an application of the theory of probability. Here pure probability alone was assumed. Certain concrete cases of pure probability can be found, for instance, in games of chance. Suppose we take 5x as meaning 5 red cards, and the various quantities of y as meaning so many black cards. If increasing quantities of black cards were mixed with a fixed quantity of red cards, and if the whole pack were then dealt out in pairs, the probable number of mixed pairs and the probability of each black card meeting a red card would work out in every case in the manner just described.

Let us take a still more concrete case. If in a certain community there were a thousand women all of marriageable age, and all desiring to be married, and if in this same community there were only one man of marriageable age also desiring to be married, and if furthermore polygamy were prohibited, the probability that this one man would, within a measurable

[1] Only odd numbers of y may be taken, otherwise all will not be paired off.

period of time, be married, would amount, for practical purposes, to certainty. The same would be true of any small number of men. But if the number of men increased considerably and amounted, say to 500, we should not be at all certain that all of them would be married off within a given time. If the number of marriageable men reached 1000, the chances of marriage for each man, tho good, would be much less than before. If the number of men increased further to 2000, 3000, 4000, etc., each man's chances of marriage would gradually diminish, while the chances of each woman would increase.

Here some one will protest that human factors are being neglected. Men and women have qualities which are sometimes better and sometimes worse; in one instance there may be more likelihood of attachment than in another; in one community social life gives to each sex more opportunities to meet the other than in another. All this is true and even more. Despite this, however, the element of chance still remains, and we are justified in our conclusion that as the number of either sex increases, the number of the other remaining constant, the probability that any one of the first will be married diminishes.

Further study will convince us that the law of probability underlies most, if not all, natural phenomena, and where this is true when two or more factors are under consideration, the law of diminishing returns must hold true. Ever since the time of Laplace, who, at the end of the eighteenth century, was the first to make a systematic study of the theory of probability and its applications, more and more attention has been given to its applicability to science. Its real significance, however, was not apparent until the work of Professor Willard Gibbs of Yale University. In his *Statistical Mechanics* he showed that the second law of thermodynamics was only a deduction from the laws of probability, that in fact all physical and chemical laws which are concerned with molecular action are likewise deductions from the same laws. There are millions of molecules in any mass, moving about at a tremendous rate, going in all directions, and making in-

numerable collisions; yet at any state of pressure and temperature, each molecule has an average mean velocity, there is on the whole an average direction and an average number of collisions.

The laws of chemical equilibrium, including the law of mass action, are corollaries of these laws of probability as applied to molecular activity. As this branch of chemistry is very technical, and as it would take us too far afield to go into detail, we cannot stop to derive these laws. Suffice it to say that when two substances react, the extent and the rate of the reaction is governed by the active mass of each substance. As the reaction proceeds, the rate gradually diminishes until an equilibrium is reached. Because of these laws, an increase of either one of the substances in reaction will increase the rate and extent of the reaction but not in proportion to the increase. For example, if we bring together ethyl alcohol and acetic acid, they interact to produce ethyl acetate and water. If we take these in equivalent ratio, action will cease when two-thirds of each is transformed into ethyl acetate and water. If the ethyl alcohol and acetic acid are brought together in the ratio of three to one, the action will go on until nine-tenths of the acetic acid is converted.

Enough has been said to show that diminishing returns is not an isolated phenomenon. Let us take an example from agriculture to which the law was first applied. The three important elements of plant food in the soil are potassium, nitrogen, and phosphorus. For proper plant growth these must exist in a certain ratio. If there is too little of any one element, the soil will not yield sufficient produce. If then we add some of this element to the soil in the form of a fertilizer, we shall have an increase of product. Up to a certain limit an increase in this element will bring an increase in the crop, but again not in proportion to the increase of the element. The following table, based upon the results of actual tests at the Rothamstead station, will illustrate this point:

						Average yield in bu. for 8 years	Gain for 43 lbs. of nitrogen
Plot	5 mixed minerals alone					19	
6	"	"	and	43 lbs.	nitrogen	27¼	8¼
7	"	"	"	86	"	35½	7¼
8	"	"	"	129	"	36¾	1¼
16	"	"	"	172	"	37½	¾

There is here a diminishing return from successive applications of nitrogen.

In many cases it is more difficult to trace the cause of diminishing returns. Yet in every case we find chance as one of the factors. We saw before that in a community where there were few men and many women, every man would be fairly certain to meet a woman and enter into the relation of marriage. We can apply this to the three factors, land, labor, and capital. If the number of the units of any one of these is small, each unit will be more likely to meet units of the other factors. If, to take a concrete instance, there were only one plow in the community, this plow would combine with a large number of labor and land units, and it would be sure to meet some of these units all the time. If the number of plows became inordinately large, each plow could not be used as much as before, and plows would be idle a great part of the time. The important fact in each of these cases is the probability of idleness. A plow is capital, and an increase of plows is an increase of capital. The second plow would add a great deal to the product, and so also would the third and fourth, but not quite so much. The same applies to an increase of labor or land.

We can examine this fact more closely if we take an example from the manufacturing industry. Suppose a laborer is employed at a milling machine, milling the end of a steel rod. His task can be analyzed into a series of motions, which consist of those made to operate levers, to adjust the rod, take it out, and put another in its place. The laborer is capable of making a certain number of motions within a given time. If he operates only one milling machine, his motions can be adjusted almost perfectly to the milling process; that is to say, within a given time, the motions required to be made

will combine with the machine process to give a maximum result for each machine. If now, he operates two milling machines, the combinations of muscular motions with the processes of the two machines will be more effective from the point of view of total product, but less effective for each machine. In other words, there is a diminishing return for each increase in the number of milling machines. This will be true, whether the constant be the number of men or the number of motions each man is capable of performing.

In view of the preceding, it is hardly possible to deny that the law of diminishing returns is universally valid. If criticism is at all possible, it can refer only to the applications which economists have made. Yet it is evident that valid applications can and must be made. As we are not here concerned with the subject matter of economics, but rather with its fundamental notions, no attempt will be made to apply the law.

To those who might object that what has been said is not physical fact, and can have no foundation in positive science, I should point out again that all the laws of science may be said to rest on probability. The law of probability is as much a part of the eternal nature of things as any of the laws of physics or chemistry. A protest might properly be made if there were here any attempt to set up a permanent scale of probabilities with reference to any of the factors of production. The differences between the returns from one quantity of any factor and an increased quantity of the same factor may be reduced to a minimum, but physical fact requires that some difference remain.

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A DEFINITION OF "CONDITIONS OF LABOR"

COLLECTIVE agreements between organizations of workmen and their employers generally provide that "wages, hours and working conditions" shall be determined by the joint decision of the representatives of both sides. What is meant by the terms wages and hours is of course clear, but the phrase "working conditions" (as well as its equivalents "conditions of employment" and "conditions of labor") is distinctly ambiguous. Many indeed regard this phrase as similar to the "necessary and proper" clause in the federal constitution, thus giving elastic powers to the joint body created to administer the agreement.

In the contests over interpretation, labor is almost invariably the broad constructionist party while management is the narrow. A study of collective bargaining in several industries cannot fail to impress one with the belief that the interpretation which is given to this term depends more upon the relative strength of the two parties than to the logic or rhetoric of the respective sides.

The very obscurity of the term, however, is leading many employers at least to be more cautious in agreeing to submit "working conditions" to the process of collective bargaining. They are typically beginning to inquire what the phrase includes, and some are insisting that its definition be written in the bond. Somewhat fearful of the increasing powers of organized labor, they are unwilling to trust to the process of evolution to define this term, since evolution may go against them. The formation of a joint agreement in one important industry has indeed been prevented at least temporarily by the uncertainty over this very phrase.

Plainly it is time that we should begin to define our terms and determine what this phrase means. The present definition is largely based upon the interpretation which the Shipbuilding Labor Adjustment Board gave to it. The following

subjects in the opinion of the author are included under working conditions:

1. *Sanitary conditions.* This is plainly a condition of labor and includes such topics as the provision of
   (*a*) First aid.
   (*b*) Proper toilet facilities.
   (*c*) Proper changing facilities.
   (*d*) Protection against industrial poisons or diseases. The Shipbuilding Labor Adjustment Board, for example, found it necessary to forbid the use of the "spray gun" in painting ships in order to protect the painters from lead poisoning.
2. *Safety conditions.* This also is clearly within the purview of conditions of labor. It includes:
   (*a*) The proper safeguarding of machines, equipment and conditions of work.
   (*b*) The education of the employees in safety measures.
3. *Apprenticeship and industrial education.* This has long been an accepted item for regulation of collective bargaining. Under it are included such topics as
   (*a*) The number of apprentices permitted.
   (*b*) The length of service required of apprentices.
   (*c*) The thoroughness of the training given.
   (*d*) The wages of apprentices and learners.
   (*e*) The relation of the industry to trade, industrial and continuation schools.
   (*f*) The plan and functions of the vestibule school.
4. *Questions relating to the paying of men.* The Shipbuilding Labor Adjustment Board found it necessary to legislate upon such questions as
   (*a*) How often should the workmen be paid?
   (*b*) Should payment be made upon employers' or employees' time?
   (*c*) How much of a man's pay can and should be held back?
   (*d*) How soon after leaving must payment be made?
   (*e*) Should workmen be compelled to make stipulated payments for medical and hospital care and in-

surance protection? If so, under what conditions? How should the fund be administered?

5. *The classification of workmen.* This is an important yet little considered topic. Who is to decide whether a man is a first or second class mechanic; a helper or an apprentice? The Adjustment Board was compelled to take this question into its own hands to insure justice to both sides.
6. Should men be discharged for legitimate trade union activity and what is the meaning of the term legitimate? A trade agreement recognizing a union or unions as one of the parties to it, generally protects men from discharge or discrimination because of union membership. But what about union activity? Can a man solicit membership
   (*a*) At work, as long as he does not interfere with his own job.
   (*b*) At the lunch hour.
   (*c*) Within the gates before and after work.
   (*d*) Immediately outside the gate.
   (*e*) What rights does he have as respects the holding of office in his union, etc.?
7. *Machinery for adjusting grievances.* How should grievances be adjusted?
   (*a*) By the intercession of the business agents of the unions? If so, what rights should they have inside the plant?
   (*b*) By committees of the employed? If so, should the representation be by trades or from the shop as a whole? What provision should be made for the representatives of minorities. The National War Labor Board in certain cases provided for some form of proportional representation in the election of these committees.
   (*c*) If shop or craft committees are authorized, what should be their relations to the unions and to the business agents.

8. *Definition of the term "grievances."* If machinery is provided to adjust grievances, what shall be regarded as the proper grist for it to grind? Should it include
   (*a*) Violations of the points mentioned under headings 1 to 6?
   (*b*) Such supplementary questions as alleged abuse by foremen, etc.?

The author feels quite clear in his own mind that the preceding points all come under the definition of "conditions of labor." He is not, however, clear about the following points, but recognizes that they will probably be settled by the relative strength of workmen and employers rather than by academic definition:

(1) Introduction of new processes. How far should this be under the joint control of labor and capital? How far should the workmen be protected against speeding-up? What consideration should be paid to the questions of productivity?

(2) Speeding up of old processes. This problem is to that of the introduction of new processes.

(3) What control should the workmen exercise over their foremen? No one in close contact with industry today can ignore the fact that the workers are demanding a voice in the selection, placement and discharge of their foremen. Many walkouts have occurred recently either because foremen they didn't like have been appointed or retained, or because foremen they did approve of were discharged. Should workmen choose their own foremen? Should they be chosen jointly? Should the management have the power of nomination and the workmen that of rejection? These questions lead us into the problem of industrial democracy and challenge an answer. What should the answer of the economist be?

(4) What control over industry itself should the workers exercise? Might it not be argued that such questions as the irregularity of employment, methods of decasualizing industry, and all forms of welfare work, etc.,

cannot be divorced from the conditions of employment and should be placed under the joint control of labor and the management ?

The question of the closed or open shop, the writer believes should not come under the term " conditions of labor," but should receive separate treatment in the trade agreement.

The above approach toward a definition of the phrase " conditions of labor " is necessarily incomplete and inconclusive. The writer's hope is that it may serve to stimulate discussion and thus lead to a clearer and better definition.

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ANOTHER REASON WHY WAR PRICES ARE HIGH PRICES

AT the Richmond meeting of the American Economic Association Dr. A. C. Miller, after reviewing the conditions usually recognized as accounting for the great rise in prices during recent months, closed with the remark that the persistent rise in prices was a continuing mystery; that the usual formulae — increased gold supply, the expansion of credit, curtailed production, increased demand, and heavy exports — when given their due weight did not explain the phenomena; the rising price level was still a mystery.

It is not expected that the paragraphs which follow will resolve the mystery, but it is hoped that by calling attention to a factor hitherto little considered, if recognized at all, they may contribute something to the explanation of the fact that war prices are high prices.

One who accepts the quantity theory will of course look for the explanation of the changing price level in the distributed relation between the amount of currency in circulation, using the term in its broadest sense, and the amount of " money

work" to be done. The one point that this note deals with has to do with changes, not in the amount of currency, but rather in the amount of goods to be exchanged; and primarily with the one factor of the rapidity of their circulation.

An approach to the matter in hand may be made by a cursory examination of certain current explanations of the phenomenon. Increased cost of production is one of these. If, however, "cost" is used in the popular sense as synonymous with expense, the formula explains nothing, but merely accepts the fact for which an explanation is sought and states it in another way. If, on the other hand, "cost" is used in its technical sense, the formulae does not explain why prices should rise except as higher cost leads to a restriction of production; and if this is what is meant it seems better to state directly, if it is true, that prices have risen because of decreased production, due, let us say, to increased cost of production. It does not appear, however, from the figures at hand that in the basic industries at least, there has been any diminution in production. In most such industries the last two years have been years of prodigious output; in many of them these have been banner years. The production of anthracite and bituminous coal, petroleum, copper, iron ore, and steel has been greatly stimulated. The great cereal crops taken together have yielded more during the last three years than during the preceding three-year period. Cotton production has not kept up to the high level of 1913 and 1914, but it has been well sustained at nearly twelve million bales. Potatoes and tobacco have shown great increases in 1917 and 1918 over previous years. The Chicago packers killed three million more meat animals in 1918 than in 1917, and according to figures given out by the Department of Agriculture meat production was greater in 1918 than in 1914 by 4.5 billion pounds. While the production of wool has shown no increase the imports were vastly greater during the last three years than for the preceding three. The imports of tea, coffee, and silk have shown substantial increases during the war and the imports of rubber more than doubled during the last three years as compared with the preceding three years.

In many lines of manufacture production has no doubt decreased, tho when the figures shall have become available it will probably appear that in the industries of large volume "high cost" has, on the whole, not checked production.

Another set of explanations approach the matter from the side of demand. The insistency of the government's demands is urged as a reason for rising prices — what the government wanted it would have at any price. For vast quantities of goods, marginal utility, the usual governor of consumption failed to exercise its steadying effect on purchases. Such feverish bidding as the government engaged in must, it is true, inevitably have forced a rise in the prices of the things bought, and in turn of those which entered into their production. If, however, for patriotic or other reasons there had been a corresponding check on private consumption, the insistent bidding of the government, while it would have caused a rise in the prices of the goods bought by the government, it would not, according to the quantitivist philosophy, have disturbed the price level. The only way the feverish bidding of the government could affect general prices was, to repeat, by disturbing the relation between goods and money means; and this it did simply by putting the government in possession of great quantities of goods. The effect would have been substantially the same if the government had commandeered the goods at established prices.

If the greatly increased demand of the last two years had been the result of more active private buying of the usual sort and the goods had circulated through the usual channels general prices would have risen. But there is this peculiarity about government purchases that enhances their power to affect the price level: When once they are made the goods are withdrawn from circulation at once and finally. Under peace conditions a large proportion of the steel production would have passed through many hands in one form or another before reaching the final consumer, making a demand for money or money means at every exchange and the same is true of the products of the textile mills; but government orders went directly from the mill to the final consumer.

Vast quantities of goods passing directly into the hands of the government ceased to circulate as effectually as tho they had ceased to exist. In the Quartermaster General's *Report for 1918* there is an interesting chart showing the distribution of stocks from factory to reserve depots, from these depots to training camps, embarkation ports, intermediate depots, and so on to the "regulation stations" and finally to the soldier, but at no stage did they constitute a demand for money; stores were "requisitioned" and "issued," not bought and sold.

The scale of these withdrawals of goods from circulation is indicated by the following table showing the amounts of various supplies ordered by the War Department from April 1, 1917 to the signing of the armistice, the amounts delivered to February 8, 1919, and the amount of the orders cancelled.

	Ordered	Delivered	Cancelled
Stockings, light woolen, pairs	70,111,000	52,652,000	1,427,000
Stockings, heavy woolen, pairs	63,375,000	47,788,000	589,000
Undershirts, cotton	50,170,000	44,956,000	901,000
Undershirts, winter	35,852,000	31,636,000	100,000
Undershirts, winter	35,852,000	31,636,000	100,000
Coats, various materials	54,700,000	47,523,000	4,469,000
Trousers and breeches	50,799,000	45,131,000	3,466,000
Gloves and mittens, pairs	45,222,000	41,228,000	1,101,000
Boots and shoes, pairs	33,287,000	31,901,000	

The War Department's purchases of subsistence to the signing of the armistice amounted to $729,000,000. The Navy, the Shipping Board and other agencies of the government were similarly active buyers in their fields. Keeping in mind the uncertainty of the duration of the war and remembering over what distances goods had to be moved and the number of points at which depots of supplies had to be maintained, there seems to be some excuse for the "wild orgy of buying" [1] indicated by these figures.

Now, if these commodities and others of which they are typical would ordinarily pass through the hands, say, of three

[1] The New York Times, February 23, 1919.

sets of dealers from factory to consumer, the government purchase of them reduced their circulation by two-thirds. But, in addition to this, the government's method of buying in many cases brought it in control of goods before fabrication; in control of the cloth and even of the fiber of which it was made. The Paymaster General of the Navy in his last report mentions purchases of 14,500,000 yards of denim and cloth. The War Department's order for textiles of various kinds amounted to 598,250,000 yards, while cancellations of these orders amounted to only a little more than 10,000,000 yards. The government's purchases of wool down to February 15, 1919 reached 612,450,000 pounds and it was obligated to buy 110,000,000 pounds more.

The effect of this large-scale purchase by the government, often in the early stages of production, and its method of dispensing them without the further use of money, by decreasing the rapidity of circulation of great quantities of goods, must have affected the price level in the same way as would a reduction in the amount of goods, or a sudden resort to barter on a large scale, or to a more direct move of marketing. This peculiarity of the government's demand is not, of course, the most important factor of the many operating to produce the high price level. Inflation, on the one hand, as Dr. Miller frankly calls it, and increased consumption at home and the swelling exports on the other, are doubtless the dominant forces; but surely the falling off in the "demand for money" through the withdrawal of large quantities of goods from the ordinary channels of trade is a factor that cannot be neglected when the attempt is made to explain the mystery of the present price level and to show why war prices are always high prices.[1]

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[1] It is possible also that study may show that the government's regulations of prices and of profits, while designed to prevent the rise of particular prices, may by the process of limiting the number of transactions have caused a diminution in the demand for money that had an appreciable effect on the general rise in prices.

AN OVERSIGHT IN THE THEORY OF INCIDENCE

In studying, recently, with a class in taxation, Professor Edwin R. A. Seligman's *The Shifting and Incidence of Taxation*, the writer of this note came across the discussion of *A Uniform Tax* (on agricultural land) *according to the Quantity or the Quality of the Land*.[1] Analysis of the argument of a part of this section seems to show a rather important oversight which entirely vitiates the conclusion.

Professor Seligman's discussion of the matter here in question is as follows:

"Suppose that there are three tracts of land producing wheat of the same quality, but, as a result of differences in fertility, yielding respectively ten, twenty, and thirty bushels to the acre; and suppose further that this quality of wheat is worth 50 cents a bushel. Tract A would thus yield $5.00 an acre, tract B, $10.00 and tract C, $15.00."

Then "if in the above case the tax per acre on grade A were 50 cents, on grade B, $1.00 and on grade C, $1.50," the price of wheat would be "55 cents per bushel" instead of 50 and "the amount of taxes paid by the landowners would exactly equal the increased price obtained from the consumers. Hence, whenever a land tax is graded as to follow with precision the differential advantages of production, and where the land is cultivated intensively *up to the point when the law of diminishing returns becomes effective*,[2] given a constant demand, *the tax will be shifted entirely to the consumers*,[3] without causing them any additional loss."

It is not clear what Professor Seligman means regarding diminishing returns. In the strict sense of the expression, returns would begin to "diminish" on tracts C and B long before it was worth while to cultivate land as poor as tract A.

[1] See third edition, New York (The Columbia University Press), 1910, pp. 259, 260.

[2] Italics are the present writer's.

[3] Ibid.

What should be assumed is that the better tracts are cultivated intensively up to such a point that the marginal return to labor (or labor and capital) on them is no greater than the return to labor on the extensive margin. For the remainder of the present discussion it will be presumed that this is what Professor Seligman really means. It is evidently assumed — altho it is not specifically stated — that the differences in fertility among the different tracts are natural and more or less permanent rather than that they are maintained by differences in effort and investment among the owners.

The principal point which is involved in the main criticism here advanced is the nature and significance of the intensive margin of cultivation. On Mr. Seligman's assumption regarding different grades of land, tract C yields 30 bushels to the same amount of labor which can get only 10 from tract A. But it may be entirely possible that the labor which yields 10 bushels on A could, by being used for the more intensive cultivation of C (or B), add 9.8 bushels to the product otherwise there yielded, making a total of 39.8 bushels. To assume an addition to the product on this tract, from the added labor, of anything over 10 bushels, would be inconsistent with the hypothesis that tract A is actually used. But to assume an addition of 9.8 bushels is entirely consistent with that hypothesis.

Let us turn now to the tax of fifty cents on tract A, $1.00 on tract B and $1.50 on tract C. Since tracts B and C are superior to tract A by more than the entire tax to which their owners are to be subjected, these tracts would continue to be used to produce wheat and to produce at least as much as if untaxed, even if there were no increase of price whatever because of the tax. It is because the owner of tract A will cease cultivating if he cannot get fifty cents more for his 10 bushels, when the tax is laid, that the tax is supposed to be shifted entirely upon the consumers in a price of wheat five cents higher per bushel than before. But if the labor which produces 10 bushels on A can, by increased intensiveness of cultivation, add 9.8 bushels to the product of C, this result clearly need not follow. For the tax, being graded upon the

land according to quality, will not be raised on tract C merely because C is now worked more intensively. That is to say, the extra 9.8 bushels produced on tract C adds nothing to the tax. Hence, the producer of this 9.8 bushels need only receive $5.00 to induce the production [1] and not $5.50. But $5.00 for 9.8 bushels is little more than fifty-one cents a bushel. It follows, then, that the tax need not raise the price, as claimed by Seligman, by five cents a bushel, the amount which would reimburse the owners of all the farm land (tracts A, B, and C) for the tax, and which would be necessary to keep tract A in use, but only about one cent a bushel, the amount necessary to cover the extra cost of producing wheat on the (now) slightly lowered *intensive* margin.

The same oversight above criticized occurs near the beginning of the section here under discussion, where Professor Seligman supposes a tax of fifty cents on each acre of agricultural land without regard to quality and concludes that such a tax would raise the price (demand being constant) by five cents a bushel. No such conclusion necessarily follows.

H. G. BROWN.

UNIVERSITY OF MISSOURI.

[1] Admission is made that such a tax, by reducing slightly the efficiency of goods production might, according to the quantity theory of money, slightly raise the general level of prices and the price of wheat with the rest. No allowance is made for this point, however, in the discussion above.

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The essays bearing an epigraph and accompanied with a sealed envelope containing the name of the author, must be sent in to the Norwegian Nobel Institute, 19 Drammenavei, Christiania, before July 1, 1922.

BOOKS RECEIVED

Best, Harry. The Blind: Their Condition and the Work being Done for Them in the United States. New York: Macmillan. 1919. pp. 763. $4.00.

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Stoddard, W. L. The Shop Committee: A Handbook for Employer and Employee. New York: Macmillan. 1919. pp. 104. $1.25.

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Vanderlip, F. A. What Happened to Europe. New York: Macmillan. 1919. pp. 188. $1.25.

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Wines, F. H. Punishment and Reformation: A Study of the Penitentiary System. New York: Thomas Y. Crowell Co. 1919. pp. 481. $2.50. (Revised edition with additional chapters by W. D. Lane.)

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A. History of Liberty. *Half-course.* Members of the Department.
[2. European History from the Close of the Middle Ages to the Outbreak of the French Revolution. Professor MERRIMAN.]
30a. Continental Europe since 1815. *Half-course.* Asst. Professor LORD.
32a. American History: The Formation of the Union, 1760–1829. *Half-course.* Dr. MORISON and assistant.
32b. American History: The Development of the Nation, 1830 to the Present Time. *Half-course.* Professor CHANNING.

For Undergraduates and Graduates

3a. History of the Roman Republic. *Half-course.* Professor FERGUSON.
3b. History of the Roman Empire. *Half-course.* Professor FERGUSON.
[4. History of Greece to the Roman Conquest. Professor FERGUSON.]
[5. The Church in the Middle Ages from Charlemagne to Dante.]
7. Renaissance and Reformation. *Half-course.* Professor MERRIMAN.
[8. History of France to 1328. *Half-course.* Professor HASKINS.]
9. Constitutional History of England to the Sixteenth Century. Professor MCILWAIN.
10a. American History to 1760. *Half-course.* Dr. MORISON.
11. History of England during the Tudor and Stuart Periods. Professor MERRIMAN.
12. The History of England from 1688 to the Present Time. Mr. LASKI.
[14. The French Revolution and Napoleon I. Asst. Professor JOHNSTON.]
15. History of Russia. Asst. Professor LORD.
[16. History of Spain. Professor MERRIMAN.]
17a. The History of the West to 1850. *Half-course.* Professor TURNER.
17b. The History of the West, 1850–1919. *Half-course.* Professor TURNER.
18. History of the Far East in the Nineteenth Century. *Half-course.* Professor COOLIDGE.
19. The Eastern Question. *Half-course.* Professor COOLIDGE.
[28. History of Modern Germany. Asst. Professor LORD.]
[33. The History of Massachusetts from 1780 to the Present Time. *Half-course.* Dr. MORISON.]
[37. Hellenistic Culture: its Character and Spread. *Half-course.* Professor FERGUSON.]
[40. History of France in the Seventeenth and Eighteenth Centuries. *Half-course.* Professor MERRIMAN.]
41. Intellectual History of Europe, 500–1500. *Half-course.* Professor HASKINS.
[55. Introduction to Military History and Theory. Asst. Professor JOHNSTON.]
56. History of Latin America. *Half-course.*
57. Recent Commercial History of Latin America. *Half-course.*
59. History of Mexico, Central America, and the West Indies. *Half-course.*
60. History of Argentina and Chile. *Half-course.*

Primarily for Graduates

[6. The First Eight Christian Centuries.]
21. Introduction to the Sources of Mediaeval History. *Half-course.* Professor HASKINS.
[22. The Elements of Latin Palaeography, with reference to the use of historical sources. *Half-course.* Professor HASKINS.]

23b. Selected Topics in the Historical Development of American Institutions: Political and Social History since 1815. *Half-course.* Professor CHANNING.
24a. The History of Christian Life and Institutions in Europe since the Reformation. *Half-course.* Professor EDWARD C. MOORE.
24b. The Expansion of Christendom and the Naturalisation of Christianity in the Orient, more particularly during the Nineteenth Century. *Half-course.* Professor EDWARD C. MOORE.
25. Historical Bibliography and Criticism. *Half-course.* Professor HASKINS.
27. Topics in Modern European History: Bismarck's Foreign Policy, 1862–71. Asst. Professor LORD.
[29. Selected Topics in the History of the Nineteenth Century. Professor COOLIDGE.]
[31. Selected Topics from the History of Continental Europe in the Sixteenth and Seventeenth Centuries. *Half-course.* Professor MERRIMAN.]
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61. Latin-American Trade Problems. *Half-course.*
History of Religions 1. The Origin and Development of Religion. *Half-course.* Professor G. F. MOORE.
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[History of Religions 7. The Religion of the Roman Empire at the Beginning of the Christian Era. *Half-course.* Professor LAKE.]
[History of Religions 9. Beginnings of Christianity. Professor LAKE.]
[History A 1. History of the Church in Outline. Professor PLATNER.]
History A 2. History of Christian Doctrine. Professor PLATNER.
[History A 3. Christian Institutions, historically and comparatively considered. Professor PLATNER.]
History A 5. History of the Church in America. *Half-course.* Professor PLATNER.
History A 6. History of Early Christian Literature. Professor PLATNER.
History A 8. History of Congregationalism. *Half-course.* Professor PLATNER.

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20b. Topics in the History of English Institutions. Professor MCILWAIN.
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History of Religions 20x. Professor G. F. MOORE.

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